

# ARMY

DECEMBER 1960 • 60¢



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that can fight a non-  
nuclear war

Col. THOMAS J. B. SHANLEY



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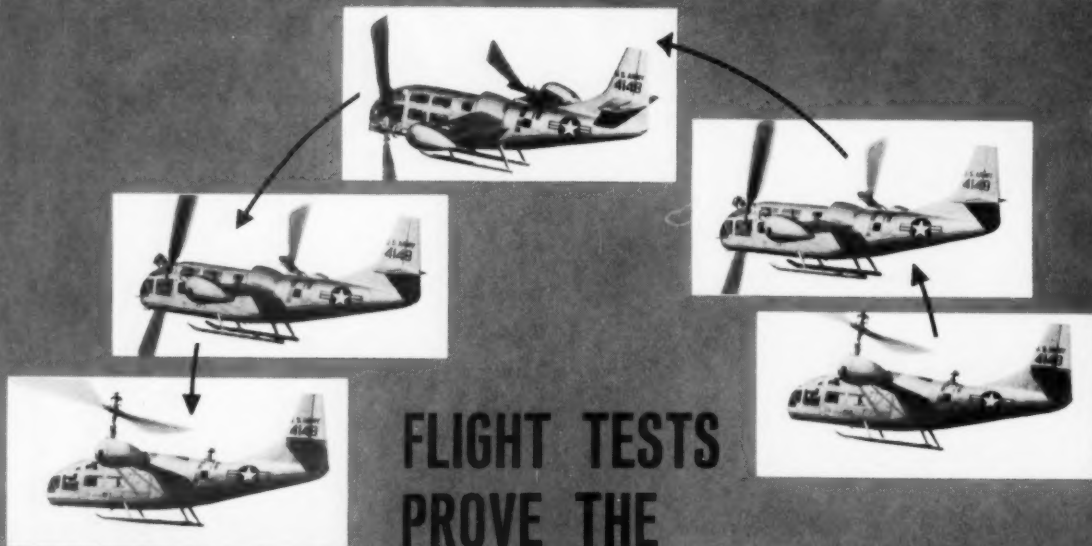


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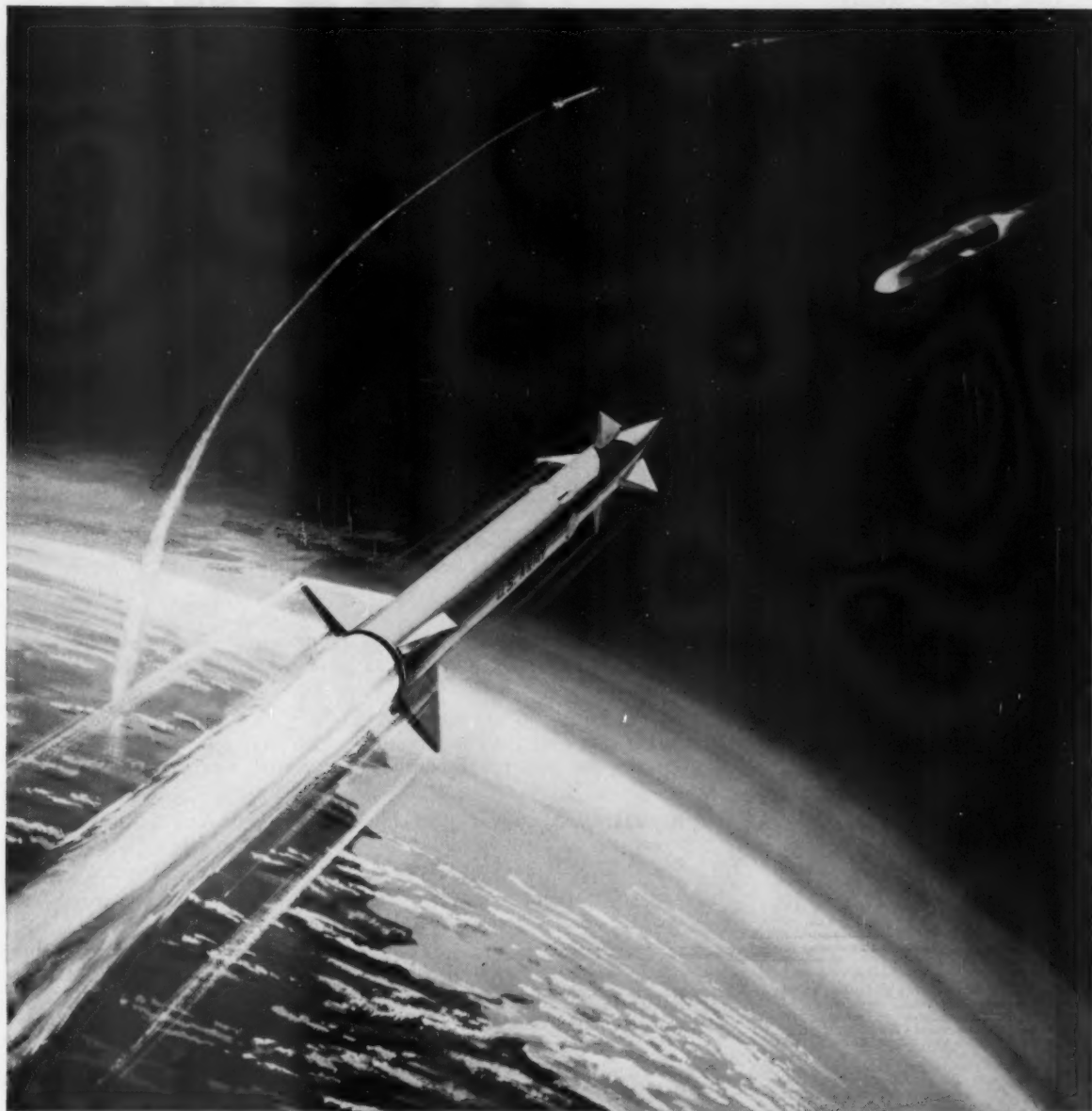
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# ARMY

A PROFESSIONAL PUBLICATION DEVOTED TO THE ADVANCEMENT OF THE MILITARY ARTS AND SCIENCES AND REPRESENTING THE INTERESTS OF THE ENTIRE U. S. ARMY

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Design by Tom Hickson



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# ARMY

## letters

### ATTITUDE AND APTITUDE

● I think the gentleman from Chicago who asserts [Editorial, October] he gets "the strong impression that parade-ground spit and polish is not going to make much of a contribution in the next war" misses the point. If parade-ground spit and polish promotes basic military precision and courtesy, it's time well spent away from the blackboards and the count-downs in this nuclear age, fundamental as they may be.

In my judgment, there is another fundamental, equally as important as technical proficiency in this age of automation. It's attitude *as well as* aptitude. Sloppy soldiers, sloppy uniforms, sloppy manners reflect sloppy attitudes, sloppy commands, and sloppy objectives.

"Put a *sir* on it, *sir*!" has even more meaning and significance today than ever before when the whole world has become a target area.

COL. EDWARD M. KIRBY  
New York, N. Y.

### FOSTERING THE ONE-ARMY CONCEPT

● I note with pleasure and interest the story in your October issue of the 75th Maneuver Area Command teaming with the 39th Infantry Division to conduct unit tests ["One Army Success Story," Capt. Gary G. Hymel].

It is gratifying to note the increasing attention which the National Guard is receiving in your fine publication.

MAJ. GEN. SHERMAN T. CLINGER  
The Adjutant General  
North Little Rock, Ark.

### HELP WANTED

● Now that summer has gone and I begin to lay away summer uniforms, one fact is obvious: almost none of my khaki uniforms are of the same shade—not even those I purchased earlier this year.

Why can't the QMC or Chemical Corps develop a dye or process whereby khakis could be redyed to the authorized shade periodically, to insure uniformity? This could be an added service of the post laundry.

I'm sure many others have also had to discard serviceable khakis because they had either lost their color

or had become several shades darker than other pieces. Any suggestions?

CAPT. CHARLES P. COX  
Fort Holabird, Md.

### LIMITED VERSUS GENERAL WAR

● The term "general war," as currently being taught in our service schools ought to be abandoned forthwith. When associated with its allied term, "limited war," it actually may do the Army a disservice.

I start with the premise that all wars are, to some degree, in some way, limited. But when we use the present classifications in referring to the various forms of war, we automatically sell the Army short. To use "limited war" in today's context, a "general war" becomes axiomatically unlimited.

A limited war in its present context is small potatoes. What we're concerned about as a nation is a general war with ICBMs flying through space like arrows at the battle of Hastings. In this league, there's no real concern over an Army without modern weapons. After all, any one of our soldiers is worth three of theirs. Besides, a limited war would be fought much like World War II was. Ha!

What would happen if we called all forms of war limited, facing the truth of the matter, and proceeded from there? In this event the classifications might work out like this. For the most intense exchange, "thermonuclear war." Next, "atomic war, unrestricted." Then, "atomic war, restricted," "conventional war, unrestricted," and "conventional war, restricted." I make no defense of this terminology as such, but in the first two, even here, military considerations might outweigh the political; in the others, political factors clearly play the dominant role. The very classification would imply that ultimately the political tail will continue to wag the military dog, which is as it should be. But in any event, the new words would tend to play up the Army's role, rather than down.

I think this kind of change would be of most immediate benefit in the semantic squabble which we must win before we can get the proper hardware and funds to perform the

Army's assigned tasks in the event of a shooting war—whatever you call it.

CAPT. DAN COUGHLIN  
Seattle, Wash.

### IN PRAISE OF THE 8-BALL

● I know I'm supposed to be reading ARMY for the informative and educational articles it contains. But, to tell you the truth, the biggest pleasure I've gotten in the past year has been Major Ben Spurlock's stories about the 8-Ball Express.

There's a man who knows how to spin a yarn.

I've circulated my copy around to the members of my Reserve unit until it was worn out. I'm damned glad he came up with another instalment in the October issue.

Major Spurlock is a fine Author—with a capital A.

SAUL LAVISKY  
Columbia, S. C.

### INFORMATION ON GENERAL WHITNEY

● I am trying to gather every possible bit of information on the late Brig. Gen. Henry Howard Whitney, who made a "lone-wolf" expedition to Puerto Rico in the early days of the Spanish-American War. He graduated from USMA in 1892, retired in 1920, and died on 2 April 1949.

My address is 3920 Milan Street, San Diego 7, Calif.

EDWARD A. DIECKMANN

### SPACING ANTITANK MINES

● There is a minor error in "Man Against Tank" in the August issue. The daisy chain described by Lieutenant Lyon would not appear to be very effective, in that he says the mines are buried five feet apart. Burying them would make it difficult to pull the mines across the road (I assume he means to camouflage them), and being five feet apart, will give a tank a chance to pass between them.

I mention this because in Korea during July 1950 the 1st Platoon of my company (C of the 8th Engineer Battalion) knocked out the first T34s committed against the 1st Cavalry Division, and won themselves champagne from the division commander, plus the Silver Star. The heavy antitank mines were tied together with rope, about one foot apart, stacked by the shoulder of the road, and a camouflaged rope was run across to where the men hid in some rocks. Two groups were put out, about a hundred yards apart. Two T34s came toward our front lines, outside the town of Yongdong, south of Taejon. The first group let the tanks pass and the sec-



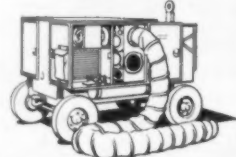
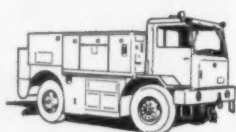
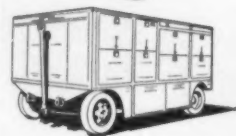
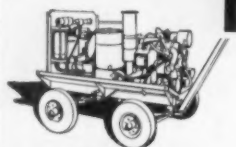


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## LETTERS

and pulled the chain of mines across at the right time and knocked out the leading tank. Then the by-passed group pulled theirs across and knocked out the second tank as it tried to back away. No casualties were sustained by our men, but one complained of being hard of hearing. No wonder, since 12 pounds of TNT had gone off on the road about five feet above him.

MAJ. THOMAS J. JONES  
West Point, N. Y.

## NOTE ON A REVIEW

● The excellent review of *Tabulating Equipment and Army Medical Statistics*, which appeared in the May issue, has just come to my attention.

I am most appreciative of your reviewer's remarks, and I know that my fellow authors will be as grateful as I am for his gracious, kind and perceptive comments. I am having a copy of this review sent to each of them.

Major General Silas B. Hays, then The Surgeon General of the Army, who asked us to prepare this book, thought that such an account would be of interest to our medical officers. We are gratified that others are also interested in this subject.

Colonel Hamilton and Mrs. Hellman join with me in sending our most grateful thanks to your reviewer.

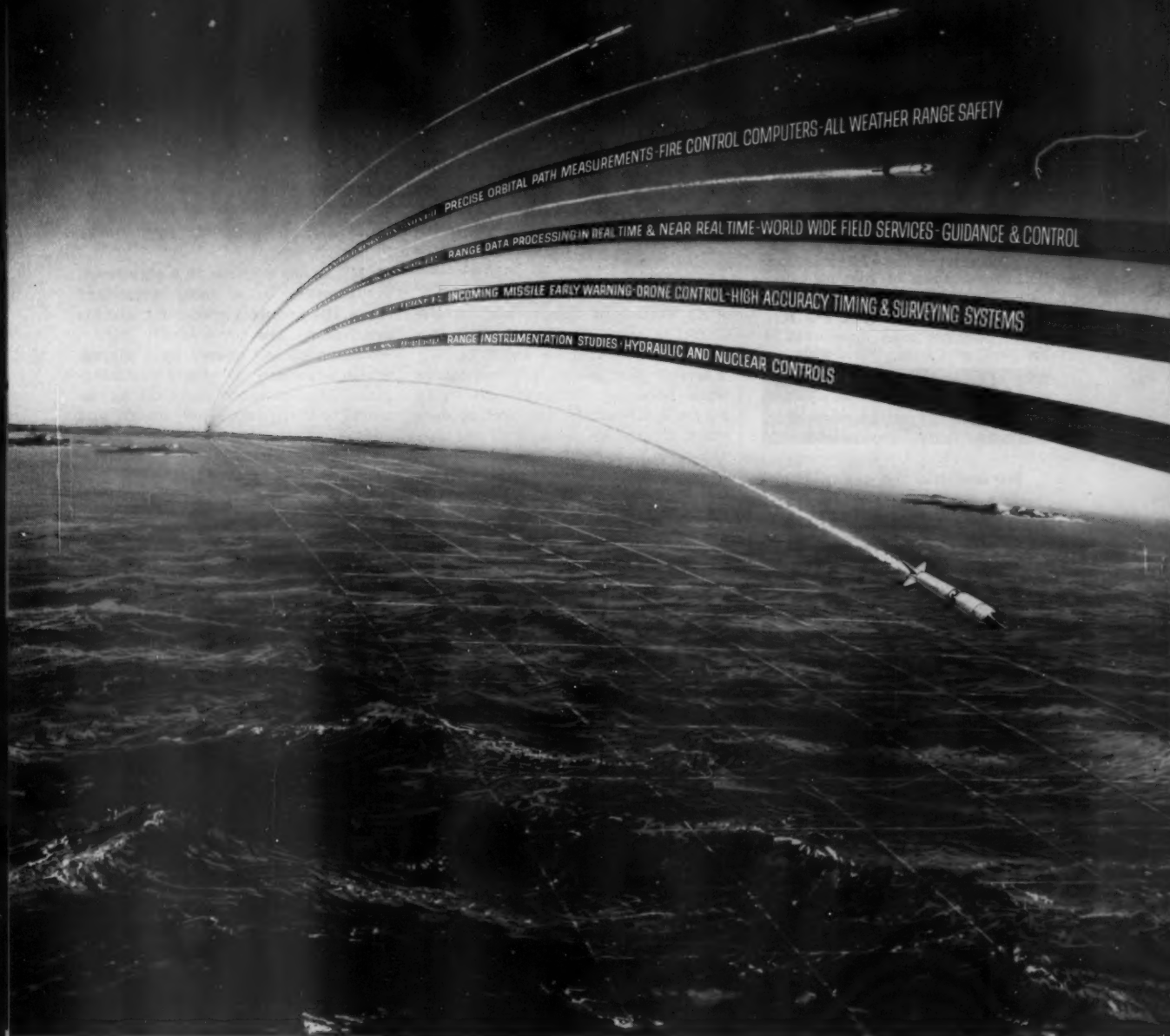
BRIG. GEN. ALBERT G. LOVE  
Washington, D. C.

## IN DEFENSE OF ROTC

● I would like to offer a word in behalf of college ROTC before it is thrown out the window.

My ROTC days left an indelible stamp on me. The real value of the training was the imprint left by those charged with its teaching, rather than the hours spent in drill or studying the Civil War. Our instructors must have been superior, for they seemed to be the personification of all that was fine, upstanding and manly, and were engaged in the commendable business of defending their country.

I attended college from 1936 to 1940. At that time ROTC, or anything that smacked of the military, was even less popular than it is today. My high-school teacher took pains to show me how I could avoid ROTC training. Anyone willing to play soldier apparently wasn't quite dry behind the ears. Our instruction included materiel and service of the piece in our freshman year. As sophomores, we learned radio and telephone communications and how to handle survey instruments. As upper classmen, we



## THE MISSILE RANGE: Measure of Capability

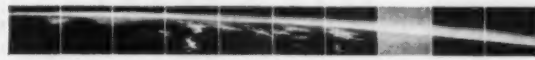
The missile range today is a vast proving ground for advanced technologies. It symbolizes the "state of the art" in computation, physics, chemistry, metallurgy, propulsion, hydraulics, electronics, inertial guidance, communications and every other scientific field.

The most critical need of the missile range is to *know system performance exactly*. This calls for integrated standards of measurement and data handling, and therefore for entire systems and entire installations engineered to that objective.

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## LETTERS

learned to be platoon leaders and how to "exec" a firing battery, how to adjust fire, plus many specific and also general academic subjects. There was less need for ROTC graduates then than there is now, yet we went into the Reserve and were there when needed. Some of us ran a lot of weight off during the first weeks of active duty, but most of us were first-class citizens who learned to be first-class soldiers.

As stated in the article on the ROTC in the October issue, the student may feel that he would be only a second-class officer, and that others were born to command and make major decisions. If that feeling does exist, it must be changed. If the officer corps is to be divided into classes of officers, then any reserve program will fail when it becomes identified with any of them. This can be prevented only by giving more attention to the personnel program.

The correct administration of an officer career program requires more effort and attention than the entire missile program. . . . If ever there was a time to refurbish the ideologies upon which our country is built, now is the time to do it, in our ROTC programs.

Therefore, let's not eliminate or

water down the ROTC because it is less palatable or less popular, but use it to supply the intelligent, hard-driving, dedicated officers we need, and then see that they are given the same consideration for schooling, assignments, overseas tours and promotions as any other group.

NAME WITHHELD BY REQUEST

● Mr. Lyons's article is a significant contribution to a most important issue. His premises are wrong, and his conclusions are consequently faulty. However, he has opened up a subject which apparently is widely misunderstood. If a research associate in national security does not understand the purposes of the National Defense Act of 1920, it is likely that many others concerned with the ROTC program do not have a clear understanding of it.

The primary objective of the ROTC program is not to provide career officers. Its purpose is to provide wartime leadership for the citizen army. The experience of World War I had shown that the excellent career leadership developed in the regular services during peacetime but it could not meet the requirements for mobilization of our citizen army in wartime. The concept of the ROTC program is that officers commissioned through it, except for a few taken into the Regular Army, will pursue their peacetime professions and not be called to extended duty except during wartime mobilization.

Since World War II, we have had protracted partial peacetime mobilization. For inadequate reasons the Regular Army's strength has not been increased to meet the full peacetime demands of national security. Instead, the Army has drawn from the ROTC officers who are oriented for civilian careers to serve on extended active duty. It is understandable that this course has produced bad morale and has not been conducive to career recruitment.

The Navy took a different approach to career recruitment in the Holloway Plan. Applicants were career oriented from time of acceptance, and the Government paid for their education, as at West Point and Annapolis. It is not clear why the Army has no parallel program. Some officers have claimed that such a career plan would undercut the ROTC. Such statements reflect lack of understanding of the different purposes of the two programs.

(Continued on page 74)

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authors

Born in adversity, NATO has never experienced either the self-confidence of overwhelming strength or the joys of tranquility. That it has nevertheless survived for more than a decade is an accomplishment of great worth but no guarantee of future survival. NATO, either as a political idea or as a military force, must move with the times and face up to the challenges of the future. The military challenges to NATO, more specifically to NATO's defense of Western Europe, are the subject of Col. THOMAS J. B. SHANLEY's article beginning on page 29. Colonel Shanley, who recently concluded a tour of duty in Army OPS at the Pentagon and is now on the staff of the Joint Chiefs, is an infantryman, a paratrooper, and a 1939 graduate of the Military Academy.

Effective military satire is hard to come by, but "The Military Institution of the Ruritaniens" on page 32 is, we think, an effective effort. The author, an officer on active duty who insists on anonymity, borrowed his pseudonym from *The Scarlet Pimpernel* because he considered it just ridiculous enough to fit the tone of his effort which concerns some military trends he considers dangerous and some he thinks are plain silly.

It is not as far a cry as one might think for the author of the justly praised *The Fall of the Philippines*, a volume in the Army's official history of World War II, to write about Chief Joseph of the Nez Percés (page 35). Dr. LOUIS MORTON (Lt. Col., USAR), now professor of military history at Dartmouth College, is also the author of the forthcoming *Strategy and Command*, another volume of the official history.

For soldiers with a strong inclination towards organization, the subtleties of line and staff are eternally engrossing. On page 43, we publish another article on this subject written by a soldier with considerable credentials. When Lt. Gen. HENRY S. AURAND retired in 1952, after 37 years of service, he was Commanding General, U. S. Army Pacific. Immediately before that he had served General Eisenhower as Director of R&D and later Logistics of the War Department General Staff.

As we have mentioned before, Mr. CHARLES S. STEVENSON (page 48) journeyed to the Far East as correspondent for ARMY in the spring of 1960. So interested did he become in that part of the world that he is now preparing to make a return trip under his own auspices.

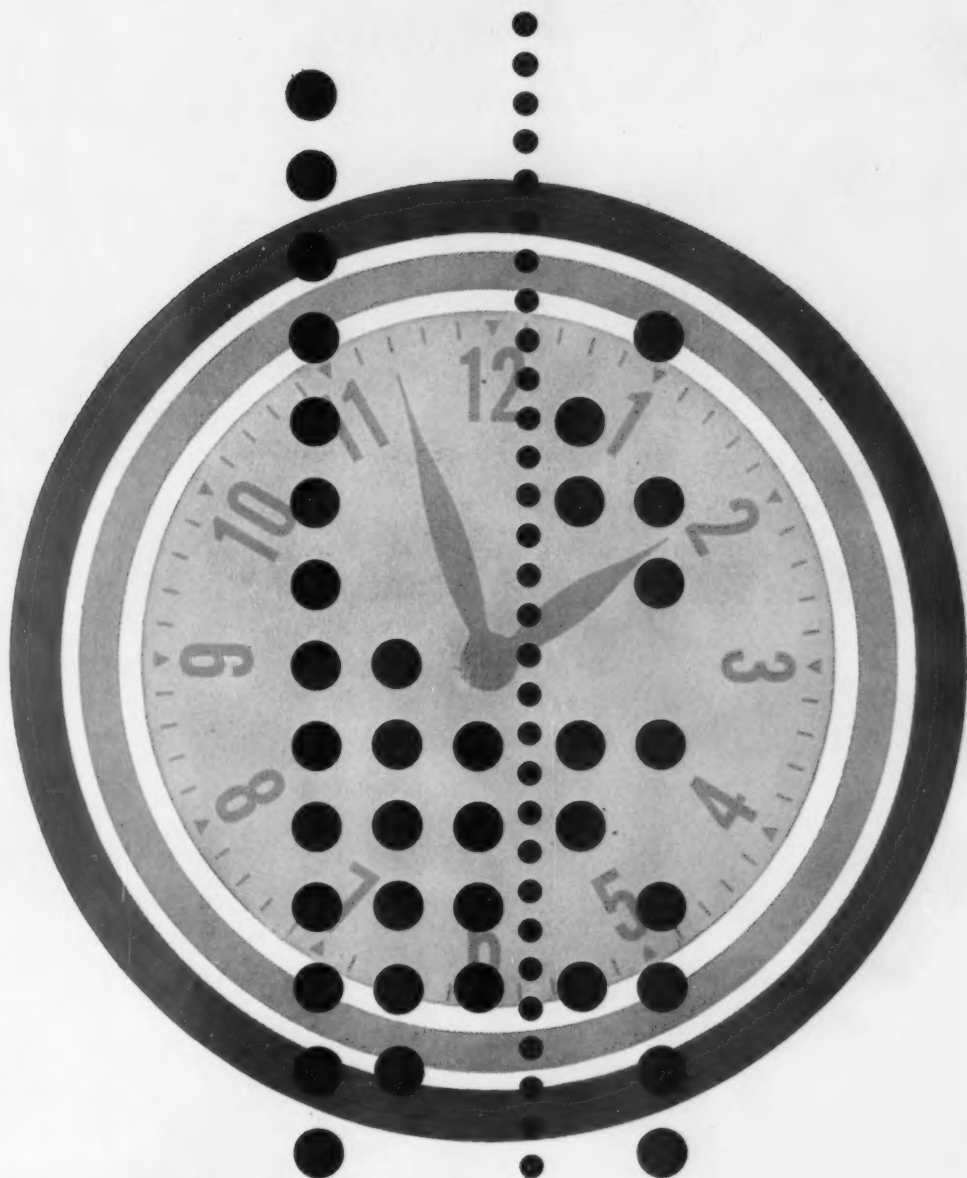
Col. ROBERT B. RIGG, Armor (page 50) has written many articles for ARMY including "The Red Enemy" (June 1960). Recently graduated from the Army War College, Colonel Rigg is now on the staff of Commander in Chief, Pacific.

COL. ALLEN C. MILLER, III (page 55) is a retired infantryman who has had important combat and peacetime assignments. During the Second World War he served with the British commandos and was a battalion commander in the 513th Parachute Infantry. He was in Greece during the Communist civil war and in Korea commanded, for a time, the 7th Infantry Regiment of the 3d Infantry Division. Peacetime assignments included being project officer of Project Vista at the California Institute of Technology, Director of Doctrine of the Army Air Support Board, and tours of duty with the Weapons Systems Evaluation Board, the Combat Development Experimentation Center and as Chief of the Army's Leadership Research Unit. He is now with a defense industry which we can't name because of company policy.

Lt. Col. LAWSON W. MACGRUDER, JR., Infantry (page 61), became Infantry Representative of the U. S. Army Standardization Group in London in 1955 and was stationed at the Headquarters of the British School of Infantry at Warminster. This circumstance gave him the opportunity to develop the material for his article. He is now assigned to the G3 Section of Fourth Army Headquarters.

Our Cerebrationists (page 68-72) this month include a young officer of the Corps of Engineers who uses the pseudonym of Arthur King; Col. THEODORE C. MATAXIS who commands the 1st Airborne Battle Group, 505th Infantry; Capt. HAROLD J. MEYER who is on duty with the Weapons Department at The Infantry School; and Lt. Col. PRENTICE G. MORGAN, who recently retired from the Army.





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# ARMY

## front and center

### NATO's Problems

Nothing more graphically illustrates the intertwining of foreign affairs, military security and economics than some events that took place during the two weeks following the election. Disregarding (and they really can't be) such troubled areas as the Far East, the Caribbean, and the Congo and concentrating on Western Europe, the headlines in the papers posed problems enough for both the outgoing and incoming administrations.

The gold flow from the United States and the consequent actions of the President and their effect on the military posture of the United States in Europe, the desire of NATO to become a fifth atomic

power, and the growing body of opinion that a nuclear deterrent alone cannot provide NATO with the kind of strength it must have and therefore its conventional forces must be beefed up (see page 28), are problems that were very much in the headlines in the days following the national election and will, short of a miracle, remain in them for months to come.

The actions the President instituted to rectify the balance-of-payments deficit are at best stopgap measures and future actions will depend largely on whether other NATO nations with thriving economies can and will help pick up a portion of the load. President Eisenhower stated at his press conference on 16 November that the

question of reducing American troop commitments abroad was a matter that "comes up all the time, because it's a very expensive business keeping troops abroad."

"The last thing we would want to do," he said, "would be to diminish the combat strength of our forces until the NATO countries have found it possible so to solve their problems that they can fill the gaps." But he added: "I do think that the time is coming when all of us will have to study very carefully what should be our proper portion of the load."

While the threat to our forward strategy of even partial U. S. troop withdrawal from Europe appears remote at this time, the possibility will remain if the gold flow deficit persists. Such action would of course imperil the beef-up of NATO's conventional strength in western Europe. This raises the specter of the military security of the West becoming endangered, not by the lack of manpower or weapons, but by the failure of the West's

### MR. KENNEDY WRITES AUSA PRESIDENT

## 'Unity of Purpose and Action' in Defense

DEAR GENERAL BAKER:

I am delighted to be invited to comment on the six-point statement of mutual objectives adopted jointly by the Navy League, the Association of the United States Army, and the Air Force Association.

First and foremost, I feel that the fact that the three great service organizations are able to agree publicly on major objectives is most encouraging. It indicates a realistic approach to defense problems and a high order of statesmanship in the leadership of the three groups. As you know, one of the important objectives outlined in the Democratic Platform is the achievement of a more logical organization of the Department of Defense to achieve a unity of purpose and action which I feel is sadly lacking today.

As to the content of the statement itself, I could not agree more heartily. I have emphasized again and again the need for safeguarding the military posture of the Free World, not only today but for as long as there remains a threat to our security and freedom. Our

*On 27 October 1960 Senator John F. Kennedy addressed to Lieutenant General Milton G. Baker, President of AUSA, this comment on the statement of mutual objectives [ARMY, October 1960] jointly adopted by the Association of the U. S. Army, the Air Force Association and the Navy League.*



dealings with the Soviet bloc must proceed from a base of unquestionable military superiority. We cannot carry on successful negotiations if we are weaker than the Communist States.

I have full confidence in the ability of the American economy to bear whatever burden the American people wish to place upon it for defense of our free institutions. Likewise, I have full confidence in the willingness of the American people to do whatever has to be done—if their duty is outlined to them fearlessly and openly by their leaders. Complacency and apathy can be dispelled only by the truth.

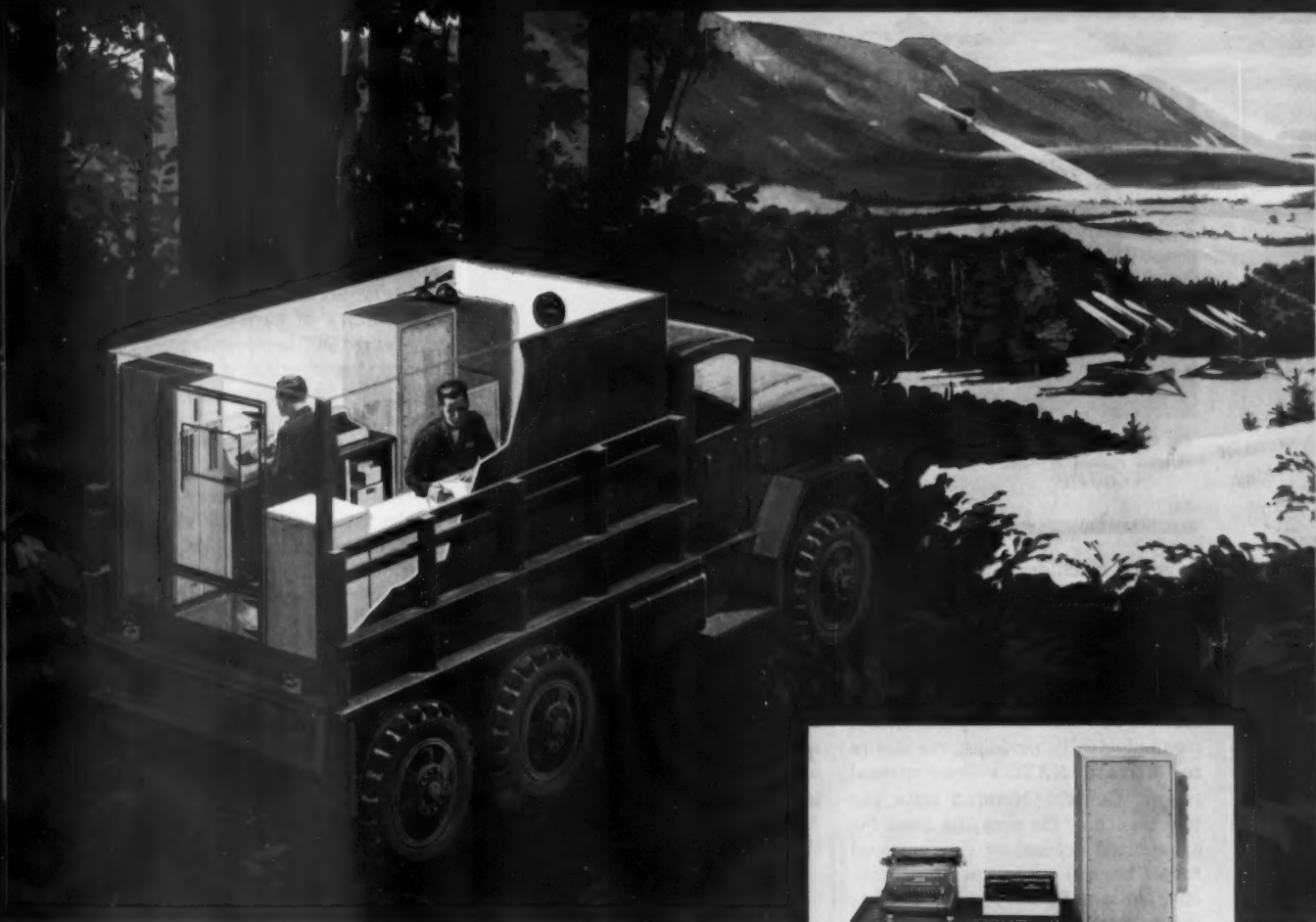
It is good to know that the members of your great organizations, who have felt the bite of war, feel so strongly about the measures that are needed to keep our nation strong and free.

My thanks to you, and the members of the Navy League, the Association of the United States Army, and the Air Force Association, for calling this fine statement to my attention.

Sincerely,

JOHN F. KENNEDY





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Basicpac is capable of handling such diverse applications as weapon-target allocation, converting raw surveillance and intelligence data into effective decision making forms and providing logistics and other administrative support activities in combat.

Basicpac will be delivered in December to the U.S. Army Signal Research and Development Laboratory for final acceptance testing.

Basicpac represents still another major achievement by Philco that will help to make the U.S. Armed Forces the most efficient and capable fighting group in the world today.

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financial machinery. Only the Communists could derive any satisfaction from such a contretemps.

For NATO to become an atomic power raises the question of how the nuclear weapons will be controlled, but does not imperil, except psychologically perhaps, the desire to increase NATO's conventional power. General Norstad puts the two together. He sees the need for a balanced defense of conventional forces backed up by nuclear weapons. Colonel Shanley develops this point very well in his article on page 28, demonstrating that NATO's nuclear power must be a deterrent power designed to convince the enemy that if he intends aggression it must be limited and by conventional means.

There can be no minimizing the seriousness of these problems. Even if they could be compartmentalized and treated separately each would be most difficult to resolve. But that they cannot be so treated is self-evident. NATO to be effective must have many arrows in its quiver of weapons and it must be backed by nations financially strong, each sacrificing to the fullest extent possible for the common good. As General Norstad has said, now is a time of "reevaluation and reappraisal—for a new look of where we are going and of how we are going to get there."

## Something Must Be Done!

As though the problems posed by NATO, SEATO, the Congo, Fidel Castro, Mao, Khrushchev, and the gold flow will be insufficient, Mr. Kennedy will also be faced with

that most horrendous quadrennial: To Do Something About the Pentagon.

The rumor factories have been full of speculation outlining just what this something will be. Trouble is, some of the programs are so contradictory that the whole kit and caboodle can be vouchsafed no more authority than a Fidelism. Among the proposals heard in Washington:

- A single military chief of staff and away with the joint chiefs.

- An Under Secretary of Defense for each of the services and away with the three separate service secretaries.

- Eliminate some of the eight Assistant Secretaries of Defense.

- Eliminate many of the committees and so-called "layers of negative impeding authority."

- Take steps leading to a one-uniformed service.

- Establish a single promotion list for officers.

- Establish a functional line of organization with commands to be called strategic war forces, limited war forces, continental defense forces, strategic reserve forces, logistical and supply services, or what have you.

- And so on, without discernible limit.

The rumor factory has failed to alert us to two other promising approaches:

- Turn the whole thing, including Civil Defense, over to General Hershey's National Headquarters of the Selective Service. No sane person would try to reorganize Gen-

eral Hershey. This would solve the problem for years to come.

Pat as that solution may be, one more commendable would be to abolish national defense and make military security the personal responsibility of each citizen. (Let's not forget William Jennings Bryan's famed asseveration: a million rifles will jump to right a wrong.) This would promote self-reliance, save taxes, lead the world from collectivism to individualism, and possibly turn many other seductive myths into realities. Or vice versa.

Of course, if these last two suggestions are rejected on grounds of flippancy and absence of the serious attitude that What-to-Do-About-the-Pentagon properly demands, it can be said that the same objection applies to many of the other proposals that are currently being heard in Washington.

It may be subversive, but it might possibly be the part of wisdom just to let everything stay as it is until the new Secretary of Defense and the new President get a solid feel of the organization they will inherit.

## Overseas Tours Extended

A few days before the announcement of the forced return of dependents of servicemen from overseas, an action that will increase costs, the Army announced plans that will add as much as one month to overseas tours for many military personnel due to return to the United States between April and November, 1961. This action was forced by the reduction in Army travel funds in the present fiscal year.

Tours of personnel in long tour areas scheduled to return in June, 1961, will be extended into July, while some due to return in the other seven months will be affected.

Normally, personnel will be returned in the same relative order as they arrived in the overseas command.

Exempted from the June tour extensions are:

- (1) Personnel due for separation from the service whose extension would prevent arrival in the continental United States in time

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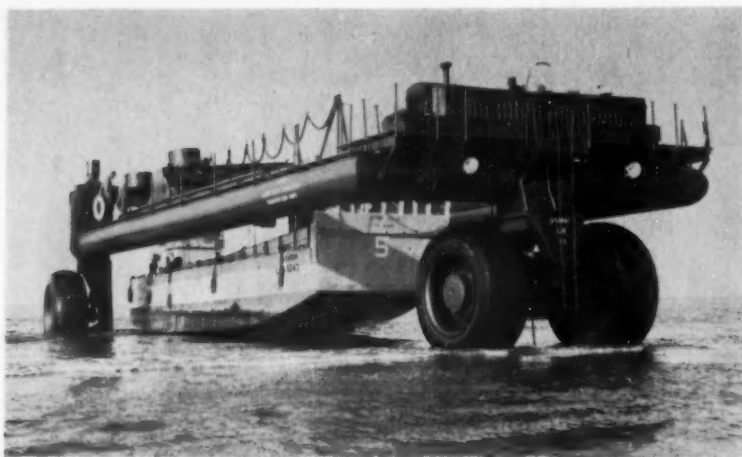
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During a recent day-and-night Transportation Corps demonstration at Fort Story, Va., the landing craft retriever, designed for recovery of beached or damaged landing craft, demonstrated a freight-lift potential by moving Sea-Vans from landing craft to flatbed trucks. In this picture, it is performing its designed mission.

for separation in accordance with existing regulations.

(2) Personnel serving in short tour areas. (A short tour area is an overseas area to which travel of dependents is not authorized or an overseas area for which the prescribed tour for personnel without dependents is less than 18 months' duration.)

(3) Personnel assigned to joint and combined headquarters, Military Assistance Advisory Groups, and missions and elements of the attache system.

(4) Those officer returnees for whom assignment instructions have been or are subsequently received assigning them to school in the continental United States.

Major commanders are authorized necessary latitude in effecting tour extensions in order to avoid creation of hardship cases.

### Natick Gives Students Opportunities

The Quartermaster Research and Engineering Center at Natick, Mass., is cooperating with a work and study program, underwritten by the National Science Foundation and the Fund for the Advancement of Education, for 50 science students from high and preparatory schools in the Greater Boston area. One preparatory and six high school boys, now seniors, spent the summer working full-time with

scientists and engineers at the Natick Center at no expense to the Government. During the eight-week period each boy had the opportunity to complete a research or development task and to present a report on his findings.

Seven outstanding Natick high school students have been selected by their faculty to participate in the QM Research and Engineering Center's other contribution to education and good community relations. Each of seven research scientists has volunteered to act as advisor and counsellor to one of these students during the school year 1960-61. The students will receive special coaching in the field of interest common to the scientist and student. They will jointly work out a program of research and experimentation, using the Center's facilities, interspersed with seminars for all students and counsellors.

### Translations for R&D

The Chief of Research and Development, General Trudeau, aware of the proficiency of many Army reservists in foreign languages, sought ways and means of exploiting that ability to the benefit of the reservists and the Army. He found there was a considerable backlog of untranslated scientific and technical material which, if trans-

lated and distributed to Army R&D activities, would add significantly to Army knowledge of foreign scientific capabilities. Those who translate this material must not only be able to translate but must have the scientific or technical background to understand what they are reading. Many R&D reserve unit members are especially suited for this work.

As a result a program known as the "R&D Translation Project" was published recently in the form of Supplement No. 2 to the Project Guide for USAR R&D Units.

The translation project offers another means of training to R&D reservists; training which will increase their technical skill, language fluency and knowledge of foreign scientific achievements. Appropriate retirement point credits will be awarded for work on this project.

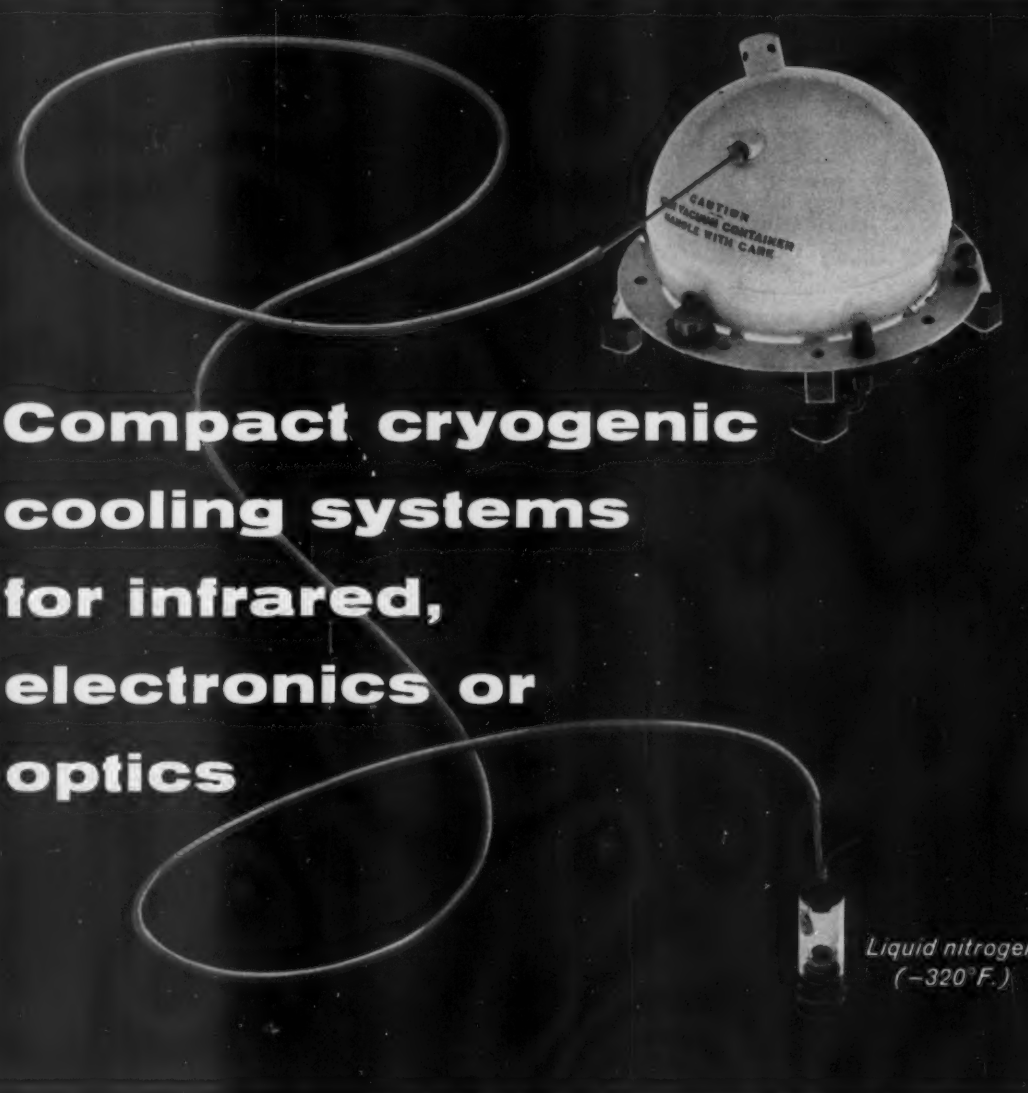
Procedure for assignment of this project has been simplified under the new Reserve regulation, AR 140-305. R&D reservists may request assignment to this project by letter through their unit commander directly to the Office of the Chief of Research and Development.

The letter must contain information indicating the language and degree of proficiency and scientific or technical field in which the individual is most knowledgeable. Material to be translated will be forwarded directly to the army corps which in turn assigns the project to the unit.

### Stilwell Papers Opened

Mrs. Winifred Stilwell, widow of the late General Joseph W. Stilwell, has removed all restrictions on General Stilwell's wartime papers which are deposited in the Hoover Library for War, Revolution and Peace at Stanford University, Palo Alto, Calif. During the early years of World War II, General Stilwell was the U.S. commander in the China-Burma-India Theater and Chief of Staff to Chiang Kai-shek. He died in 1946. Some of his story was published in *The Stilwell Papers*, issued by William Sloane Associates in 1948.





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Now units requiring cryogenic cooling no longer need be designed with allowances made for bulky expanders or adjacent storage tanks.

The new AiResearch system transfers the coolant in liquid form to a point of use 25 feet or more away. The liquefied gas passes through an uninsulated, small, flexible tube which can be bent over and around obstructions. Because the storage system can be placed anywhere, space limitations are overcome and vehicle installation problems are simplified.

The complete system includes the cryogenic liquid container, pressure and flow controls, the liquid transfer tube and cooling adapter. The system can be operated without external power. It can be used with missile, aircraft, space or ground based units and can be converted to a closed-cycle system with the addition of a small gas liquefier.

AiResearch has pioneered many new developments in the cryogenic field. It is presently engaged in work on systems utilizing helium, hydrogen or neon as coolants, and cryogenic systems for zero G operation.

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### 'These Families Are Important'

*The following is the statement Secretary of the Army Brucker issued at Fort Benning on the morning after the President's announcement of the reduction of the number of dependents of military personnel stationed overseas.*

Just as you are, I am vitally concerned and interested in the headlines of the President this morning that proclaimed the decision to bring home 284,000 of the dependent wives and families of our military members and families of Department of the Army, Navy and Air Force civilian employees abroad, in certain areas.

I feel much the same as you do, and realize the difference this makes. It will alter considerably our plan for the rotation of our officers, non-commissioned officers, and enlisted men and women at the various posts throughout the world.

I recognize the directive as orders, just as you do. However, I intend to look into the details of the directive from the Department of Defense to see what I can do to ameliorate the situation, and soften the impact on the families of our Army. I assure you that I will do everything in my power to diminish the blow to them and to soften the effect on the combat effectiveness and morale of our Army.

I have visited all the places affected and have talked to these families. I have always been impressed with the exceeding goodwill created by our families when they have established close relations with the civilians in the community. This is especially true in Germany. I wouldn't want anyone in the United States to feel that these families are not important to our international relations, because they have contributed greatly to the people-to-people understanding between our nation and theirs.

I have talked to the wives of our men in West Berlin who have always staunchly stayed with their men, in danger and in peace, and I know how courageously they have kept their homes in that situation. As the details are worked out, I will see that the Department of Defense will have brought to their attention every last factor so that the impact of each step in each area is clearly brought out before that step is taken.

I can safely say that in the areas where the families are affected, certainly we will have to make adjustments in the length of tour of duty for those men and women serving without their families.

## ARMY

### editorials

### A question of policy, strategy and money

Studies by the Army of the enrollment in first- and second-year ROTC on five campuses that made ROTC elective in the 1960-61 school year show a sharp decline from the preceding year's compulsory enrollment on the same campuses. These institutions and the percentage of decline in enrollment in both first- and second-year basic Military Science courses are:

SCHOOL	1959-60 COMPULSORY	1960-61 ELECTIVE	% OF DECLINE
University of Wisconsin (Madison Campus)			
Military Science I	953	323	66.1
Military Science II	654	238	63.6
University of Wisconsin (Milwaukee Campus)			
Military Science I	979	423	56.8
Military Science II	524	221	57.8
University of Puerto Rico			
Military Science I	937	467	50.2
Military Science II	719	250	65.2
Rutgers University			
Military Science I	582	549	5.7
Military Science II	332	196	41.0
Cornell University			
Military Science I	648	279	57.0
Military Science II	579	192	66.8

This decline in enrollment poses two significant results. One is that the Army, according to estimates it has made, will be receiving about 25 per cent fewer ROTC-commissioned officers than it needs. The other, just as serious, is that the quality of the product will fall off since smaller enrollments beginning with the first year will preclude the highly selective process that is possible with larger beginning enrollments.

While the question facing the schools seems to be alleged advantages of elective over compulsory ROTC, the question facing the Army is how it can get the number of ROTC-commissioned battle leaders it needs for both the active and reserve forces with the money that is available to it for this purpose.

We are informed that it is not exactly true that the Department of Defense favors elective ROTC (and the Army therefore finds itself at odds with Defense because it believes compulsory ROTC is essential). Our information is that the Assistant Secretary of Defense for Manpower, Personnel and Reserve Forces has taken the position that money can be saved in this area because large numbers of ROTC graduates are no longer required.

Thus the question becomes one of requirements. Is there a need for sizable manned and trained ready reserve forces to-



Five European NATO nations will produce the U.S. Army Hawk missile as the primary ground-to-air defense weapon in Western Europe. Raytheon, developer and prime contractor in the U.S. for the Hawk, is supplying technical assistance to manufacturers selected by these NATO countries.

**RAYTHEON COMPANY**

WALTHAM, MASSACHUSETTS



## Supervised Drinking

*The dragoons shall drink no water without it be boyled first—British Sanitary Orders, 1740-48.*

Almost 150 years passed before this rule came to be generally accepted. And it was not until 1855 that the Surgeon General of the U. S. Army believed it proper to report: "The recognition of the fact that water may act as the carrier of disease germs calls for . . . caution in the use of streams flowing through settled localities. . . ."

Today we have the Modern Army. Technology has provided us with hitherto undreamed of weapons, transport and communications. We have broken our ties with ancient concepts of organization and tactics. We have turned to scientists for improvement in our techniques of leadership and training. We are masters of the military art.

Are we?

" . . . Between 0100 and 0200, 21 April, several men filled their canteens with water from the Danube River, and the remainder replenished their water supply from a well. At this time it was discovered that the operational rations which had been issued to one platoon did not contain water purification tablets as expected. . . ."

"The following day, eight of the men reported on sick call with general malaise, mild abdominal cramping, non-bloody diarrhea and mild anorexia. Two men had fever. . . ." This report is from the *Medical Bulletin*, U. S. Army, Europe, October 1960.

What other, more dangerous germs might this water have contained? Might this have happened to your forward observer? Your special weapons officer? Your electronic equipment repairman?

To belabor the point, why should we rack our brains to seek protection from nuclear weapons if we are to succumb to the soldier's most ancient enemy?

The Medical Service cannot help much. This enemy attacks at the squad and platoon level. There are no surgeons there—only lieutenants, sergeants and corporals. The defense is their particular responsibility.

*The dragoons shall drink no water without it be boyled first.*

COL. HENRY S. PARKER  
Medical Corps, USA

day and in the future? The Army says there is, and it makes a good case for it.

Until the basic question is resolved, and this involves appreciation of national military policy and strategy, it is likely to stay alive, unsettling to the military services, to college authorities and to students.

Meanwhile the Army is making every effort to get full value for the money it spends on ROTC. A school whose ROTC unit is not, for one reason or another, performing efficiently may lose its unit. Said one officer in the Pentagon intimately involved in this field: "We're looking them over and we'll have to take the units away from those schools that can't or won't cut the mustard. We can use the money very well at schools that do produce."

## Equality of Sacrifice

Our press deadline does not permit us to await the Department of Defense directive spelling out the details of the President's surprise announcement of the return from overseas of 284,000 military dependents. Certainly it is a hard blow and made more difficult to accept because the dependents of employees of other Government departments are not affected and because of the suddenness of the directive.

Mr. Brucker's statement (which appears on page 24) reflects the initial reaction quite well. Here again he shows his unique capacity for understanding the men and women who serve in and with the uniformed services.

The effect on morale will largely depend upon how the directive is carried out. The suddenness of the announcement and the immediacy with which it is apparently to be carried out make the morale problem more difficult than would have been the case had there been some preparatory action. Certainly the outward flow of gold is not a new problem and indeed the possibilities of such action as the President took have been a subject of private discussion in the councils of Government for many months. A brief period of preparation would have softened the blow and made adjustment possible. This is still possible if the directive does not adamantly require immediate action.

The Army will be harder hit than any of the other services. A Defense Department announcement indicates that the Army has approximately 52 percent of the total number of some 484,000 dependents overseas. Also the areas most affected—Germany, France, the United Kingdom and Japan—are areas with large numbers of Army forces with dependents.

What this will do to the rate of retention in the services of those officers and noncommissioned officers that are most valuable is hardly unpredictable. All postwar surveys have emphasized that a high rate of resignations and failures to reenlist follows long separation of families.

Mr. Gates has stated that military people are accustomed to such sacrifices. But if they are to be palatable, the urgency must be clearly unmistakable and the sacrifice must be fairly applied. The singling out of uniformed personnel and civilian employees of the military services, rather than the employees of all Government departments, seems hardly equitable.



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Many excellent books and articles have analyzed the problems and prospects of NATO. Most observers agree about one thing: that a strong and effective NATO organization is essential to the survival of the Free World. However, on the question of what needs to be done to make and keep NATO strong and effective, we get into a confusing myriad of complex ideas. We should look at what is basically wrong with the present NATO military strategy and consider how to correct it.

The essence of this critique of NATO strategy is simply this. As we move into the missile age, the threat of thermonuclear retaliation is going to lose its power to deter the Soviets from attacking NATO. Further, NATO can no longer rely on tactical nuclear weapons to make up for a shortage of manpower. Consequently, NATO is going to have to protect itself the hard way, if it is to survive, with a modern integrated force that can defend Western Europe in a conventional, non-nuclear war.

SAC will deter Soviet aggression against NATO and our other allies only so long as the men in the Kremlin know that the U.S. has a retaliatory capability to destroy the Soviet long-range strategic striking force before it can destroy the U.S. We will lose this capability as soon as they can replace their bombers with hardened and dispersed or mobile long-range missiles. Unlike a bomber force, such a missile force can be made relatively invulnerable to destruction. Unless we can achieve an



effective anti-missile defense in being soon, we will no longer be able to keep the Soviets from destroying us. SAC will still deter Soviet attack against the U. S. itself, if it is likewise invulnerable to a Soviet first blow. However, it will no longer deter aggression against NATO or any other of our allies because the Soviets will not believe that we would commit national suicide to protect an ally.

Next, how about nuclear weapons as a substitute for manpower on the battlefield, to stop the Soviet Army? This concept is also obsolete, for several reasons.

First, NATO can no longer rely on tactical nuclear weapons to compensate for its weakness in conventional forces and firepower, as it was able to do when the Soviets had little or no tactical nuclear firepower. Now that the Soviets have developed a tactical nuclear capability that is comparable to ours, the mutual use of nuclear weapons on the battlefield would work to their net advantage. Instead of increasing the relative attrition rate of the Soviet forces, it would merely speed the mutual destruction of the D-day forces of both sides without necessarily affecting the relative loss rates. This would favor the Soviets because of their much faster reinforcement capability. A slow (that is, non-nuclear) war, on the other hand, would work more to NATO's advantage because it would permit our superior long-term mobilization capability to be felt.

Second, the prospect of a tactical nuclear war is bad for the morale of our allies. West Germany will be the initial combat zone in the defense of Western Europe. West Germany is an indispensable part of NATO. The tactical use of nuclear weapons would subject West Germany to heavy civilian casualties and widespread destruction. Hopefully, the West Germans would accept this loss of life and property to save themselves from Soviet domination. If we can avoid subjecting them to such a choice between these two terrible alternatives, however, we must do it. Our other European NATO allies are also vulnerable to major destruction from an atomic war in Western Europe. Can we use this situation as a "lever" to get them all to contribute enough more men and resources to enable NATO Europe to defend itself without resorting to nuclears?

A final and most important reason for trying to avoid the use of nuclears in the local defense of Western Europe is that a non-nuclear limited war is less likely to expand into an all-out war than a nuclear limited conflict. The clear-cut constraint of nuclear forbearance would assure each side of the other's desire to keep the war limited. It would thus allay the fear of an enemy thermonuclear surprise attack. A nuclear limited war, on the other hand, would increase this fear of surprise

and tempt both sides into preemptive all-out attacks to improve their own chances of survival.

For these reasons NATO must build an integrated, well-supported army strong enough to hold out against a conventional Soviet bloc ground attack. As soon as this force is available, NATO should announce its intention to defend itself without using any nuclear weapons unless the enemy uses them first. To make this strategy stick, the NATO forces must be backed up by a strong tactical nuclear capability; for otherwise the Soviets would be tempted to use tactical nuclear weapons because of the overwhelming advantage it would give them. But NATO's nuclear capability should be primarily for *deterrence*, to be used only in case the Soviets use atomic first.

What kind of a force does NATO need to hold off the Soviets? General Valluy, the former NATO commander in chief of Allied Forces Central Europe, has announced that 30 top-flight divisions are needed initially. NATO also needs a rapid build-up capability to about three times this strength. The most important requirements, however, are for strong, efficient conventional ground fire support, air support, air defense, tactical air mobility, and an integration of all forces into smooth-functioning well coordinated battle teams.

Some people think that it is ridiculous to propose a strategy that would require the NATO countries to shell out more men and resources for the common defense. They claim that our economies cannot support bigger military budgets and still provide the ever increasing standards of living we expect, support more aid to education, more social security, and more of all the other demands on the pocketbook of the modern welfare state. They do not believe that the politicians or the people can be made to understand that we are only amassing wealth for the Communists to take away from us unless we spend enough of it on security to protect ourselves. If they are right, we will not survive, and we won't deserve to survive. There is no question that we can afford to create the stronger forces required for a realistic non-nuclear NATO defense strategy. We can do this without crippling our economies, by paying as we go, with higher taxes. Our leaders must explain all this to the legislators and the public, then ask for the additional resources and the taxes to pay for them. The people have believed for years that SAC will keep the Russians from attacking NATO, and just in case they do attack, that NATO will stop them with nuclear weapons. This is no longer true. The people need to be told that it is not. They deserve the chance to make an enlightened choice between two alternatives. They can live well for a few years and allow freedom to perish. Or they can tighten their belts and pass some of this freedom to their grandchildren.



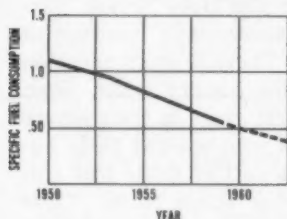
# Small gas turbines soon to surpass piston engines for competitive applications

by Herbert Kunzel, President

Solar Aircraft Company  
A Subsidiary of International Harvester Company

The gas turbine engine has made news this year as it has expanded into new and broader applications in the prime mover field. Behind this advance is continuing improvement in design and production. Even more advanced gas turbines will be developed in the next few years. In the small engine class (under 1000 hp) gas turbines will soon surpass over-all piston engine performance and cost for competitive applications. They will also retain the inherent advantages of the gas turbine over the reciprocating engine.

One of the major reasons for this prediction is an impressive improvement in gas turbine economy. Previously, fuel consumption and high initial cost have kept the turbine out of all but selected power assignments. Industry and the military both thought the engines too expensive for most applications.



Through constant improvement, however, Solar has been steadily bringing simple cycle, small turbine specific fuel consumption down to an area competitive with piston engines. The fuel consumption of Solar's early 50 hp engines in 1948, for instance, was about 2.25 lb/hp-hr. The 1100 hp Saturn engine, which went into production this year, has the excellent simple-cycle fuel consumption of only .63 lb/hp-hr. Solar's experienced engineers improve life, "producibility," and performance characteristics with each new engine. At the same time, production costs are lowering rapidly.

Another significant advance in Solar turbine development has been the evolution of a unique design philosophy. Most gas turbines fall into one of two extreme categories: 1) Lightweight, high horsepower aircraft turbines, built to be as light as possible (about  $\frac{1}{4}$  to  $\frac{1}{2}$  lb/hp), and 2) conventional industrial engines designed along the lines of steam turbines with a ratio of about 10 lb/hp. Both have inherent disadvantages. The aircraft turbines are relatively delicate with consequent problems of frequent overhaul and short life. Massive engine design, on the other hand, involves unnecessary bulk and difficulties with thermal lag and distortion. In either case, inherent advantages of the gas turbine engine are diminished and initial cost is adversely affected.

Solar's approach has been to develop a family of gas turbines that have both long life and light weight. The Saturn engine, with a weight-to-power ratio of 1.1 lb/hp, is heavier and more rugged than aircraft engines but much lighter than the usual industrial gas turbine. Although it is designed for long life, it has no more materials than are necessary to satisfy structural and thermal requirements.

Promising even further improvements in the turbine engine is the combination of Solar with International Harvester Company this year. IH saw the advantage of more power per pound several years ago. Their research and development has stressed performance and much work has been done by them on regenerative cycle turbines to reduce fuel consumption.

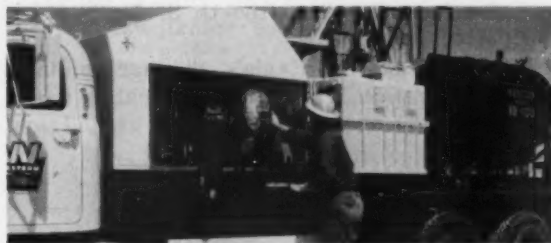
To basic research, they have added their many years of experience and leadership in high performance and low cost through efficient production of many thousands of IH engines for trucks, construction equipment and farm machinery.

Solar's successful Saturn engine development team and the combined research and resources of the two firms are now focused on further engine development in the area below 1100 hp. Preliminary design for a turbine in this range indicates that the following standards are feasible:

1. A life cycle equal to or better than conventional diesel engines—with considerably less maintenance.
2. Fuel consumption in the .4 to .5 lb/hp-hr range.
3. Cost competitive to conventional reciprocating engines.
4. Inherent ease of starting and operation in a wide variety of climatic conditions.
5. Small size and light weight.

Developments like these are certain to continue the increase in turbine applications and use.

For additional information write to Dept. H-304, Solar Aircraft Company, San Diego 12, California.



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THE

*Sacré plume de ma tante!* exclaimed the new French military attaché. "Your army, it is certainly a very small one, but it is magnificent!"

The comment of this astonished newcomer typifies the attitude of most foreign military observers when they first meet the Ruritanian Army. During the few short years since its acceptance into NATO, Ruritania has proved itself the most efficient, albeit the smallest, military power of the free world. Its army is fast becoming the model for those of its allies, a trend which found an echo in a recent article in one of our nation's most distinguished periodicals. This article hinted that even the United States was about to request a Ruritanian Advisory Group (RAG) to assist in modernizing the U. S. Army along Ruritanian lines.

To understand Ruritania's peculiar military structure, we must first examine the nation itself.

Turning back the pages of history, we find that

during the so-called Dark Ages, Ruritania, having become disentangled from the Holy Roman Empire, was part of the extensive land holdings of the wealthy Czklang clan. There is scant mention of the Czklangs in modern history texts, since their chief claim to notoriety rests in their severe treatment of the peasants who worked their numerous tenant farms. This sort of thing was not, after all, uncommon during those times. Their sordid treatment of the farmers continued until 1641, when one Rury, the son of a peasant family, became incensed when a particularly carefree member of the Czklang clan, out for a Sunday-morning gallop, playfully rode him down and trampled him into a mud hole.

Rury, bearing ever after a purple hoofprint on his left hand and a searing hatred in his soul, resolved to overthrow the oppressor. During the year that followed, 400 peasants rallied to his revolutionary banner (it is now the national color



*Regardless of what you have, you are really as strong as the newspapers say you are*

Lt. Col. D. E. PIMPERNEL

## MILITARY INSTITUTION OF THE RURITANIANS

of Ruritania, showing a swollen pink hand bearing a purple hoofprint). A misplaced decimal point in a published report of the uprising led the Czklang clan to believe they were threatened by 4,000 armed rebels. They fled the country precipitately, although their personal bodyguard of 650 picked crossbowmen could easily have dealt with the uprising.

### Correct military philosophy

From this first successful campaign which gave Ruritania its freedom Rury drew one conclusion. To this day it remains the keystone of his country's military policy: Regardless of What You Have, You Are Really as Strong as the Newspapers Say You Are.

This philosophy was successfully employed during the next five centuries in a series of local wars and border disputes. Particularly noteworthy for any scholarly soldier is the campaign of 1866. During this campaign the Utophian intelligence service managed at great risk to filch a copy of Ruritania's master plan for the deployment of its army. Noting that the Ruritaniens had massed 42 divisions along the border, Utophia sued for peace, and a treaty was concluded before the Utophian general staff discovered that each Ruritanian division consisted of only 12 men.

Today's Ruritanian Army is a direct descendant of Rury's original 400. Let us examine some of its more unusual features, particularly those dating from the Modernization Act of 1955.

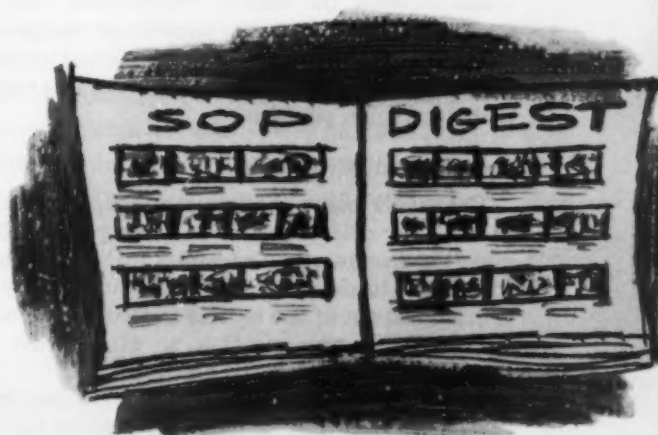
### Command structure

Direct command of the Army has been transferred from the Chief Executive to the Minister of Finance, who thus assumes the title of Com-

troller in Chief. His is the awesome responsibility of determining whether the nation can afford to be attacked on any specific day, and of notifying all potential enemies so that they might take no undue advantage of Ruritania's budgetary posture.

The next most important authority is the Director of the Standing Operating Procedure. This official is responsible for publishing a second-by-second schedule of the actions to be taken by each soldier of the Army in the event of any conceivable emergency. This SOP, published annually in 138 volumes with alphabetical and topical index, is carried in the SOP van which long has been organic to every unit headquarters down to platoon. Each squad carries a special 40-volume *SOP Digest* during tactical operations. To make it more palatable to the individual soldier, it is printed in comic book style.

The Ruritanian soldier comes from peasant





stock—and looks it. The day he reports for induction an amazing metamorphosis occurs: the grubby yokel becomes the gleaming image of a true soldier. It is said that there are few sights in the world so impressive as the Ruritanian soldier in full uniform.

### **Glory of the soldier**

One of the first articles issued to the recruit is the Service Medal, which he gets simply for being in the Army. If he has reported on time, he receives in addition the Punctuality Pendant with Cloth Ribbon. Presentation of these two coveted awards automatically gains him the Spacer Ribbon, which is awarded solely to fill out the row. Thus, by the end of his first day the recruit has a full row of ribbons and looks like a veteran.

In addition to his service ribbons, the average Ruritanian soldier wears 36 other decorative pieces. These include a silk cummerbund in the color of his basic branch; divisional, regimental, battalion and company distinctive insignia; three loops of orange-colored braid hung from the right shoulder to denote he has had basic training; nametag in the color and location of the week; qualification badges, including one for his GED score; insignia of both temporary and permanent rank; a double strand of tinsel rope to commemorate the great victory won by Ruritania on Christmas Day of 1743; a large patch on each pocket indicates a service school he has attended (when he runs out of pockets he is disqualified from further schooling); and other articles that may be prescribed by local commanders, such as scarves, tassels, armbands, whistles, and chains. No particular color is specified for the basic uniform since no one ever sees it through all the trimmings.

The field uniform is designed along more practical lines. It is of a luminescent cerise shade and usually is folded around great quantities of cardboard. A recent proposal by The Quartermaster General that the cardboard be removed from the trousers when the soldier wears them was instantly voted down in Parliament on the ground that this would detract from the distinctive stiff-legged pass-in-review which has long characterized Ruritanian parades.

### **The efficient officer corps**

The officer corps is distinctly nonprofessional. In fact, any officer accused of having a "military mind" is promptly hauled before a Parliamentary committee to defend himself. If found guilty he is drummed out of the service immediately; many senior officers welcome this, so as to avoid the stigma attached to retired status.

The officer efficiency rating system has been greatly simplified. Now only two possible ratings

can be awarded: The Best Officer in the Whole World, and The Worst Officer in the Whole World. Under this new streamlined system, a senior can easily rate 30 to 40 juniors a day without increasing his normal workload. While they are at their duty stations officers are forbidden to ask to see or to be shown a copy of any report evaluating their professional competence. However, a central file of all such documents is maintained on a small island in the Arctic Ocean. When an officer finds himself in that area he is welcome to drop in and examine his own.

### **Simplifying budget allocations**

The Army is no longer classed as a separate service of the Ruritanian armed forces. How this came about provides an interesting sidelight on Ruritanian military policy. In 1956 the Air Force began a comprehensive publicity campaign, one of whose principal features was the oft-repeated claim that since a rifle bullet travels through the air, the rifle more logically is an Air Force rather than an Army weapon. This campaign resulted in a Parliamentary decree ordering the Army to turn over all its rifles to the Air Force, and to concentrate on land-mine warfare. The Air Force then complained that it lacked the funds necessary to meet its broadened responsibilities. The Army fought back, made a few remarks about building empires on shoe strings, and issued a countercharge that since good maintenance procedures require that aircraft spend more time on the ground than in the air, the Air Force should be required to turn over its aircraft to the Army.

At this point the Comptroller in Chief stepped in and resolved the dispute by a brilliant policy decision: the Army became a branch of the Air Force and was charged with executing the Air Force's rifle mission. The Army still receives the same annual appropriation as before, but since the record now shows it as a branch of the Air Force, technically the Air Force gets 100 per cent of the defense budget (Ruritania has no navy) and everyone is kept happy.

### **Manpower and administration**

The current strength of the Ruritanian Army is 26 divisions. Each of these approximates a reduced-strength company. For simplicity in administration, all personnel of the division are consolidated into the division's Headquarters & Headquarters Company (Provisional).

Because an inspector general can inspect only one company at a time, these 26 companies share one set of TOE equipment. This equipment is passed from company to company just ahead of the IG, who thus is given the impression that the whole army is faultlessly (*Continued on page 72*)





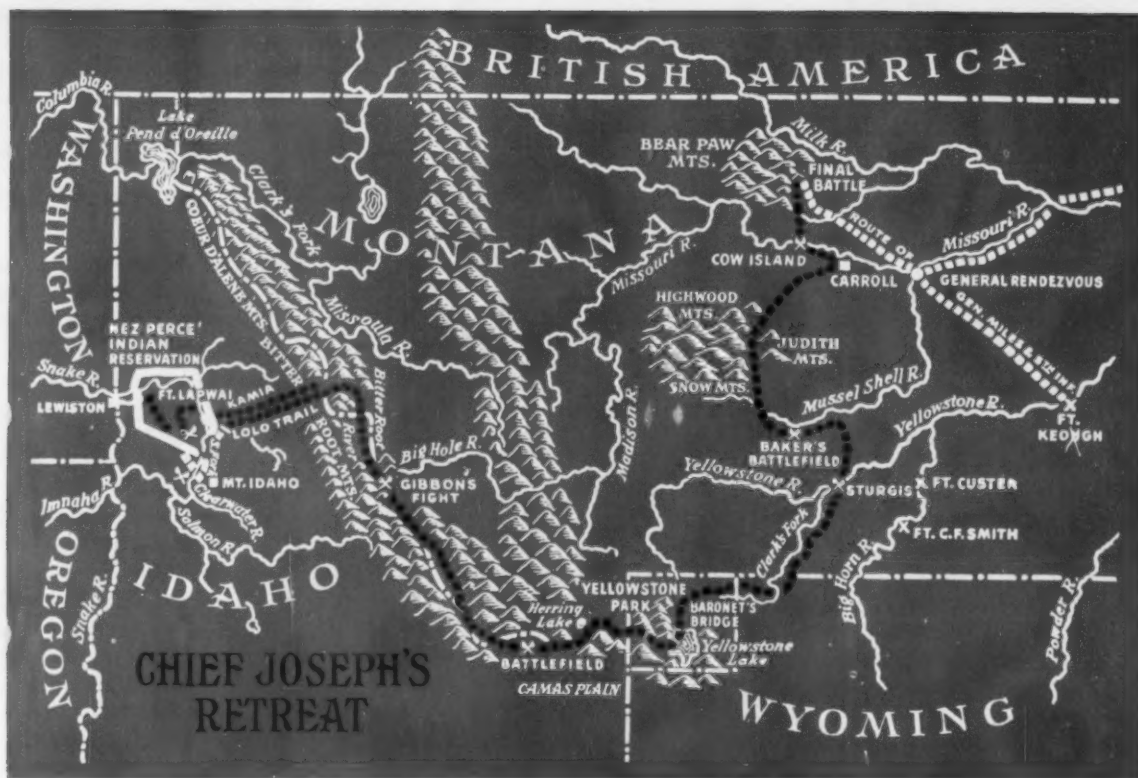
*The Bettmann Archive*

## THE GREAT RETREAT OF CHIEF JOSEPH

LOUIS MORTON

Few military operations are as difficult as a retreat and none more so than a retirement under close and constant enemy pressure through hostile territory. The first that comes to mind is the 1,700-mile march of the Greek mercenary army, the Ten Thousand, in 401 B.C., described by Xenophon in his *Anabasis*. Others are Napoleon's disastrous retreat from Moscow in the winter of 1812; the overland journey by rail of the Czech Free Legion, 45,000 strong, from the Volga to Vladivostok in 1918-20; and the famed march of the Communist Eighth Route Army in 1934-36 under Mao Tse-tung and Chu Teh from Kiangsi in southeast China to the northwestern province of Shensi, a distance of about 6,000 miles.

American military history offers its own instance of a retreat, little known but



comparable in many respects to the classic retreats of history. The number of troops involved in this operation was small, but their performance and accomplishment were as heroic and remarkable as any recorded. Their march covered a distance of almost 2,000 miles through country rougher than any seen by Xenophon, and was made under almost constant harassment and attack by larger and better-armed forces.

The heroes of this epic journey were not U. S. soldiers, but Indians of the Nez Percé tribe. And they were led by Chief Joseph, one of the most remarkable Indians in American history. His total force never numbered more than 300 braves, and against them were arrayed some of the finest troops and experienced leaders in the U. S. Army. How the Nez Percés bested these troops and came within an ace of their goal is a story rich in drama and in the lessons of military history.

**T**HE story begins in 1871 when Joseph, a young man of 31, succeeded to the rule of his tribe on the death of his father. The Nez Percés were a peaceful people occupying the fertile region where Idaho, Washington, and Oregon meet. Their fondest boast was that they had never killed a white man, and some years earlier they had ceded all their claims to Oregon territory. In 1863 gold had been discovered in the region and the whites had swarmed into their land. When the Nez Percés protested violation of the treaty under which they

held their lands the Government offered them another treaty. This time they were to move to the Lapwai Reservation in Idaho. A portion of the Nez Percés accepted the offer, but the southern tribes, including Chief Joseph's, refused to leave their home in the Walla Walla Valley of north-eastern Oregon. They had ceded all their claims in Oregon when the territory was settled; they would cede no more.

Joseph's accession to the chieftainship coincided with a renewed drive by the whites for the rich land of the Indians. Conflicts between white man and red became more numerous and increasingly bitter, but Joseph continued to counsel moderation. In general, the Army supported the Nez Percés and trouble was avoided. Moreover, so long as the Army had its hands full with the Indians of the Plains, it tried to maintain peace in the Far West. Finally, in 1877, after the defeat of the Sioux, the Government issued orders to put the Nez Percés on the reservation. General O. O. Howard, commander of the Military Department of the Columbia, was directed to enforce these orders. This was the test Chief Joseph had dreaded, and the beginning of his conflict with the U. S. Army.

**G**ENERAL Howard was an able officer, a skillful negotiator, and a sincere friend of the Indian. But he met his match in Chief Joseph. This tall, powerfully built chief had a quiet dignity

and spoke with a calm logic that no argument of Howard's could shake. The young chief was determined to honor his father's last wish that he never give up the land of his ancestors, and he intended to abide by that promise. Finally, Howard's patience wore thin. During one of his parleys with the Nez Percé chiefs he lost his temper and ordered the religious leader of the tribe arrested. Thereupon Joseph and the others left the meeting.

The loss of their religious leader was a heavy blow, and Howard used his advantage to wring from Joseph a promise he would move to the reservation if the chief was released. Perhaps Joseph intended to keep his promise but his braves showed every intention of resisting. On 13 June 1877, three of them killed a white man in retaliation for an earlier wrong. This action set off a series of raids in Salmon Valley during the next few days, at a time when Chief Joseph and his brother Ollokot were absent from camp. Altogether, 18 whites were killed, and the aroused Nez Percés were making ready for further attacks when Joseph returned. He did his best to stop them, reminding them of his promise to Howard. But the Nez Percé braves were in a fighting mood; they intended to remain and defend their tribal lands. Joseph could go if he wished, they told him, but if he remained he would have to fight the white man. Joseph elected to stay.

Hostilities were not long in coming. At the first report of the Salmon Valley raids General Howard had sent out a cavalry detachment of 100 troopers under Captain David Perry to round up the Nez Percés and take them to the reservation. Joseph's camp was in the deep canyon of White Bird Creek, and when scouts brought word of the approaching American troops, the Nez Percés made preparations to meet them. On the morning of 15 June Captain Perry's men rode into the canyon, to be greeted first by a delegation seeking a parley. One of the troopers fired at the Indians and precipitated a short, sharp fight. The Indians had been deployed on either side of the canyon and on the first exchange they came charging down on the flanks of the cavalry, routed them, and drove them back in confusion. When the battle was over, the Indians took stock. At the cost of two warriors, they had killed 34 Americans and gained about 60 rifles and a large number of pistols to add to their own inadequate store of arms.

THE Indian victory came as a complete surprise to the whites. No one had really expected the Nez Percés to fight. Their raids had been interpreted as an outburst of anger, which, it was thought, would cool quickly at the first appearance of the cavalry. Certainly the U. S. Army under General Howard, the white men of Salmon Valley believed, would have little difficulty pro-

tecting them from the Indians. But the events in White Bird Canyon wiped out any hope for a peaceful settlement with the Nez Percés, and removed any notion that the Indians would flee at the first sight of Army troops.

When news of the defeat at White Bird Canyon reached General Howard he quickly marched with 300 men from the 1st Cavalry, the 21st Infantry, and the 4th Artillery to the Salmon River to cut off the Nez Percés. But Chief Joseph and his war chiefs had anticipated this move and crossed the river immediately after the battle, reinforced by another band of warriors under Five Wounds and Rainbow. With a sure instinct they had chosen a site from which they could oppose Howard's crossing, or withdraw in any direction. "No general," wrote Howard, "could have chosen a safer position or one more likely to puzzle and obstruct a foe."

All that day and part of the next, the two forces faced each other across the Salmon River. General Howard's force was being rapidly strengthened and he was in no hurry to open hostilities. General Irvin McDowell, commanding the Military Division of the Pacific, had called for reinforcements from the widely scattered posts of his command from as far south as Yuma, and the War Department had started the 2d Infantry from South Carolina to the West Coast. By the time he was ready to fight, General Howard had 700 men.

Chief Joseph started with 200 warriors and was later joined by additional braves under the redoubtable Looking Glass, bringing his total force to 300 men. With this small force Joseph had not only to fight off the U. S. Army but also care for his people—450 old men, women, and children—and 2,000 ponies. He was not only a soldier but the leader of his people, and the entire Nez Percé tribe was on the move. To the Army this was but another campaign; to Joseph and the Nez Percés it was a war for survival—the exodus of a whole people.

General Howard had by now taken the measure of his opponent, and he moved with caution. When finally he crossed the Salmon River, he discovered that Joseph had left for the Cottonwood. There the Indians had encountered a small American detachment, part of Howard's force sent out to reconnoiter, and destroyed it. But when Howard arrived at the Cottonwood after a forced march, Joseph had already departed. Grimly, the American gave chase. Finally Joseph decided he could no longer dodge his pursuer. Selecting his position carefully, he settled down to wait for Howard on the banks of the Clearwater.

On 11 July, the two finally met. The battle that ensued lasted two days, an extraordinarily long time for an Indian engagement, for the red men rarely maintained contact in pitched battle for





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*A contemporary print of Indian scouts returning to Fort Keogh with scalps lifted in a raid on hostile Indians*

more than a few hours. Victory went to the Americans, largely because of superior numbers and weapons, including a howitzer and two Gatling guns. As it was, the Indians extricated themselves in masterly fashion and made good their escape to the north just when General Howard thought he had Joseph cut off.

**I**N a period of less than a month, the Nez Percés had fought three pitched battles and suffered many losses. They had to decide now whether to stay and fight, or surrender and move to the reservation, or seek a home elsewhere. In council, Joseph and his chiefs decided that the wisest course would be to break off the action and move out of the Walla Walla region. On the suggestion of Looking Glass, it was agreed that they should retreat to Montana where they could join the Crows, a tribe traditionally friendly to the Nez Percés. It was a hard decision, for it meant leaving permanently their beloved homeland. On 17 July, the Nez Percés struck their tepees and began the long march across some of the roughest country in the West.

Taking the Lolo Trail across northwest Idaho, the Nez Percés travelled almost due east, with

General Howard, who had express authority to go beyond the boundary of his department, close behind. Ahead lay the Bitter Root mountains, and Lolo Pass, described as "one of the worst trails for man or beast on this continent." It would have been hard enough to cross in good weather, but the Nez Percés ran into heavy rains and fog as they made their way through the Pass. Howard's cavalry, without its wagons, averaged about 16 miles a day; the Nez Percés with all their baggage did much better.

As they made their way out of the mountains into Bitter Root Valley on 25 July, the Nez Percés found their way blocked by a force of about 65 men under Captain C. C. Rawn, hastily dispatched from Fort Missoula, Montana. Strongly entrenched and under orders to stop Joseph at all costs, Captain Rawn made ready to fight. But the Nez Percés were not looking for a fight. They had come in peace and had no wish to mark their entry into Montana with bloodshed. They therefore sought to persuade Rawn to let them through. When the American refused, they feigned an attack that drew him out of position and then made their way peacefully around the fort along a little



known mountain trail and so into Bitter Root Valley. Rawn, outwitted and outmaneuvered, made his way back to Fort Missoula to explain his actions as best he could to his superiors. The fort he had built was promptly named Fort Fizzle.

In the valley, the Nez Percés met a friendly reception from the whites. They traded peacefully, gave no trouble, and rested after their arduous journey. In the hope that war was over and they might live in peace in Montana, they made camp on a meadow by the Big Hole River.

**T**HE Army, far from giving up the fight, had alerted the scattered garrisons in Idaho and Montana to send troops to stop the Nez Percés. But in all of Montana, there was only one regiment of infantry, the 7th, under Colonel John Gibbon. Taking all the men he could spare, about 200, Colonel Gibbon came across Montana and moved in to intercept the Indians. Concerned with General Howard, Joseph had given little thought to the possibility of attack from another direction, and when Gibbon attacked at dawn of 9 August the Indians were caught by surprise. Braves rushed almost naked out of their tepees and dove into the bushes to escape; everywhere there was confusion. Within 20 minutes, Gibbon was in possession of the Nez Percé village.

But the Nez Percés were of a different breed than most of the Indians the Army had met. In short order, the war chiefs had their warriors in hand. The woods was full of them and they were eager for revenge. The best shots were posted on the heights overlooking the village with orders to pick off the officers. Others moved in with a fierce counterattack that put Gibbon back on the defensive. All day long the battle lasted. When a gun squad set up its howitzer, 30 picked warriors charged in to destroy the gun. The Indians had tasted artillery fire at the Clearwater and wanted no more. Another group of braves captured 2,000 rounds of ammunition. Late in the afternoon, the Nez Percés set fire to the grass and almost won the battle that way, but the wind changed. When night came, the battle was still in progress. The Americans still held the village, but the advantage clearly lay with the Indians.

There was no profit in victory and the Indians abandoned the fight during the night. Leaving some men behind to harass the troops, they once more took to the trail. When dawn came on 11 August there was not an Indian left in the Big Hole. But Gibbon, severely wounded, was in no condition to pursue. He had lost 33 dead and 38 wounded, including 14 of his 17 officers, and the remainder of his troops were in bad shape. It was with a sigh of relief that he greeted Howard's advance guard the next day.

The Nez Percés had suffered heavily also. About

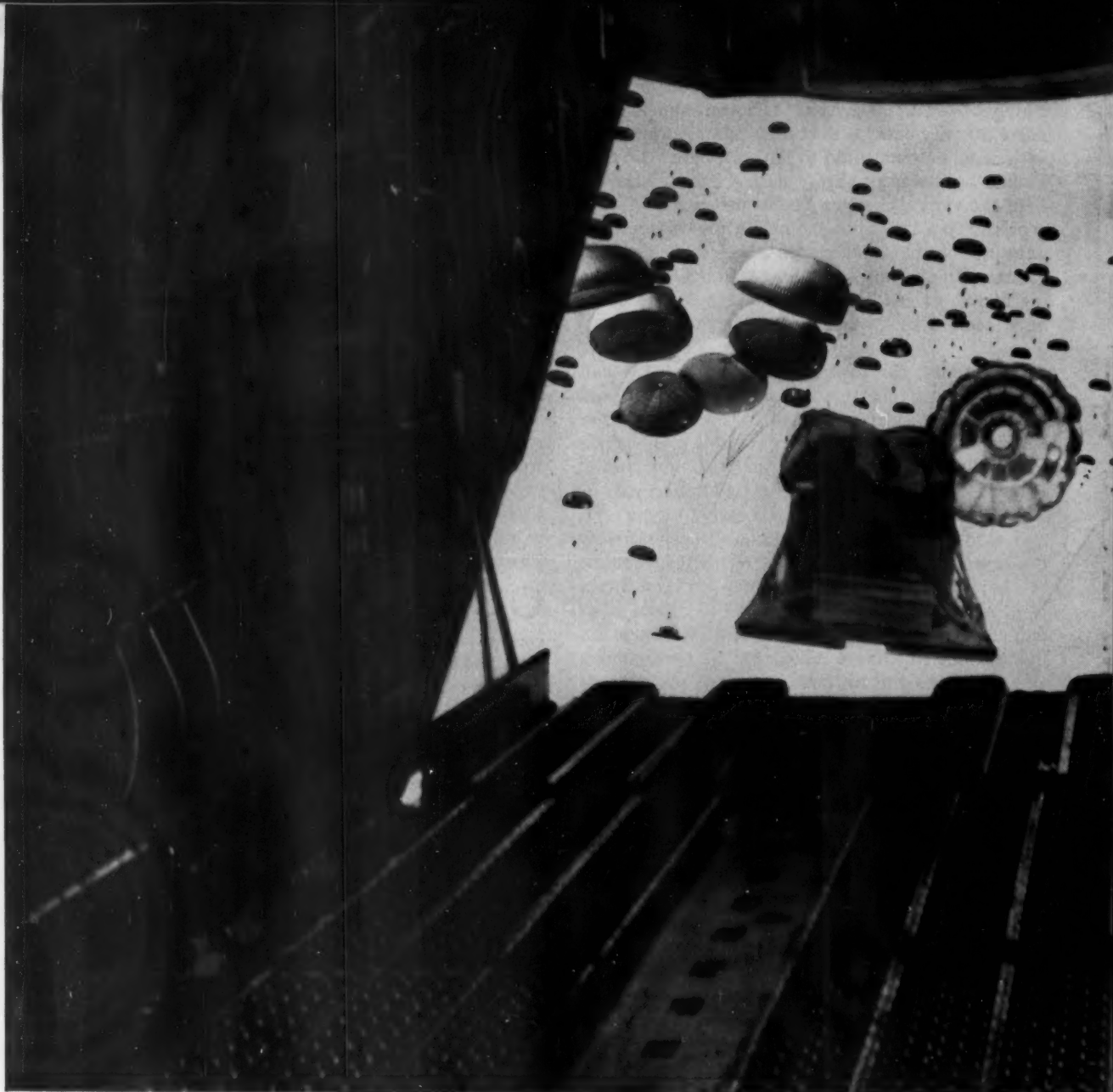
75 Indians, including several of the war chiefs, had lost their lives. Their hopes for the future had been badly shaken too. The Army would not leave them in peace and Montana was no safer than Oregon. The only escape left for them, it seemed, was to follow the example of Sitting Bull and head for Canada where the Army could not follow.

The Nez Percé route out of Montana lay south and east, toward Targhee Pass where they could cross the Continental Divide into Yellowstone and then turn north. And having been caught unawares, once, the Indians took every precaution to insure that they would not be taken by surprise again. In addition to local security measures, they sent scouts far back on the trail to report every move the Americans made. Before long, the scouts to the rear brought word that Howard was pressing hard on their trail. The war chiefs decided then they must slow up the Americans if they were to make their way safely through Targhee Pass.

**O**N the night of 20 August Ollokot and three other chiefs with about 40 warriors rode in column of fours into Howard's camp. Their mission was to stampede the Army horses and mules. In the darkness, the Indians were easily mistaken for friendly troops. After all, reasoned the white troops, who ever heard of Indians riding in such formation? And who would expect 40 Indians to ride into the enemy camp so casually? Before the mistake was discovered the Nez Percé warriors were inside the Army's lines. Rifles cracked, horses whinnied, and there was complete confusion. By the time order was restored, the Indians had accomplished their task and were making their escape.

This audacious move accomplished its purpose. By immobilizing Howard, the Indians were now free to move toward their goal and they turned east to cross the mountains, intending to turn north up the plains once they had cleared the mountain barrier. Their path would take them through the Yellowstone National Park and across Baronet's Bridge over Clark's Fork of the Yellowstone. By this time, Chief Joseph had no illusions that they would be permitted to make the journey without interference. He knew the Army would make every effort to close the pass through the mountains and to block his road northward.

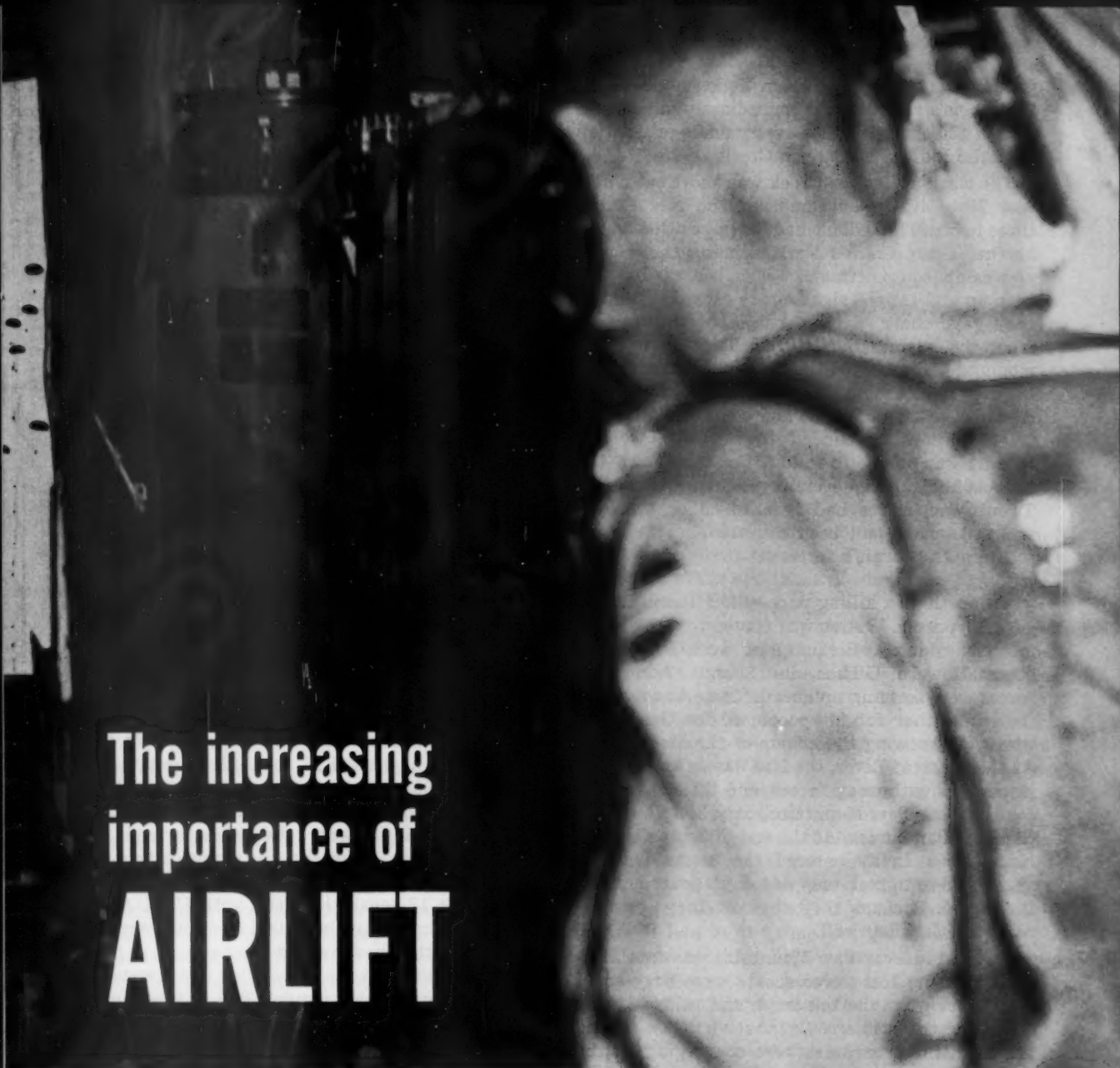
The Nez Percés had hardly resumed their journey when troops from all over Montana began to move toward them. Two troops of cavalry crossed their trail, but wisely stayed out of the way. Safely they crossed Clark's Fork and then destroyed Baronet's Bridge. Heading north up the valley of the Yellowstone, the Indians ran into part of the 7th Cavalry under Colonel S. D. Sturgis in position to block the exit from the valley. Utilizing a route that was considered impassable,



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the Nez Percés emerged from Yellowstone Valley in Sturgis's rear. Sturgis immediately gave chase and on 13 September the cavalry finally caught up with the Indians at Canyon Creek.

The clash at Canyon Creek was short but fierce. The 7th Cavalry outnumbered the Nez Percés three to one. The Indians had taken position on the heights above Clark's Fork, sending the women and camp equipment on. When the cavalymen rode up and caught sight of the escaping Indians they gave chase, only to run into accurate fire from the surrounding ridges. The cavalry dismounted and attacked the heights. Outnumbered, the Nez Percés gave way slowly, and when night came broke off the battle and continued their retreat. With his wounded to care for, Colonel Sturgis was unable to follow. For their part, the Indians had suffered even worse than the cavalry. Twenty-one braves had been killed or wounded and 900 ponies had been captured by the Crow scouts with Sturgis's force.

ON north at a killing pace, Chief Joseph drove his people. Winter was coming on and every moment counted. Behind him were three pursuers: Howard, Gibbon, and Sturgis. Additional forces were forming up ahead. There was no time for rest, either for his people or for the ponies who were showing the effects of the long march. At the Missouri River, the Nez Percés had several skirmishes with weak forces, and then pushed on for the Bear Paw Mountains, only 30 miles from the Canadian border. At the end of September the Nez Percés finally entered the mountains and paused there to rest, only one day's journey from their goal. Perhaps they thought they were already on Canadian soil.

The rest in Bear Paw Mountains was fatal. Excellent as the Nez Percé scouts were they could not report what the telegraph and railroad were doing for the soldiers. By now virtually all the troops in the Northwest were converging on the Nez Percés, but the strongest force of all, numbering 600 men, was that under Colonel Nelson A. Miles. Starting from Fort Keogh on the Yellowstone with six companies of his own 5th Infantry, three from the 7th Cavalry, two from the 5th Cavalry, two field guns, and white and Indian scouts, Miles had followed a northwest route designed to intercept Joseph at the Bear Paw Mountains. He had fresh troops, fresh horses, artillery, and a generous supply train. He knew all about the Indians' previous battles and had a healthy respect for the people he was sent to capture. All the advantages were on Miles's side.

On the night of 30 September, the two forces made contact. The Nez Percés were camped on the northward slope of the mountains when Miles's scouts found them, and the first attack caught the

Indians by surprise. But they recovered quickly and fought the Army troops to a standstill in a bloody battle. But there was no hope of escape here. Caught in a cup-shaped ravine, greatly outnumbered, Joseph held off the enemy for five days, losing 17 killed and 40 wounded. American casualties were slightly higher: 24 killed and 42 wounded. Finally, on 4 October 1877, Joseph sent out the white flag. It was sunset when he rode out to surrender to Miles and Howard, who had at last caught up with him, and delivered one of the most moving Indian orations on record:

"Tell General Howard that I know his heart. What he told me before, I have in my heart. I am tired of fighting. Our chiefs are killed. . . . It is cold and we have no blankets. The little children are freezing to death. My people—some of them—have run away into the hills and have no blankets, no food. No one knows where they are. Perhaps they are freezing to death. I want to have time to look for my children and see how many of them I can find; maybe I shall find them all among the dead. Hear me, my chiefs, my heart is sick and sad. From where the sun now stands, I will fight no more, forever."

THE surrender of Chief Joseph ended, in General Sherman's words, "one of the most extraordinary Indian Wars of which there is any record." At no time had the Indians numbered more than 300 braves, most of the time many less. This small band, the aged, the women, and children, had made its way 2,000 miles through enemy country in 11 weeks and come within 30 miles of its goal. During this time, the Indians had fought 13 separate battles with U. S. Army troops totaling altogether 2,000 men. In every one but the last they had given at least as good as they received and fought the U. S. Army to a standstill. Not once during the journey had a white man been scalped or a woman violated. This fact alone set the Nez Percés above all other Indians of their day, and for this Chief Joseph was given the credit. He was the symbol of the heroic spirit of his people.

The treatment accorded the Nez Percés after their surrender reflects no credit on the U. S. Government. Miles recommended they be sent back to Idaho, but instead they were shipped to Fort Leavenworth, where many of them died from malaria. They were a mountain people and completely unused to the hot, dry climate of Kansas. In 1884, largely through the influence of General Miles, all but Joseph were returned to their beloved mountains. Joseph himself lived on until 1904, respected alike by white man and red. He was, wrote his conqueror, "the brightest type of Indian I have ever known, very handsome, kind and brave . . . an orator and the idol of his tribe."



*Public fear of a "general" staff has left the military without knowledge of how to handle large ones*

Lt. Gen. HENRY S. AURAND

# LINE AND STAFF

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A FAMILY had just moved into a new neighborhood. Towards evening, a small boy, who seemed to have come along with the new family, ran next door, shouting: "Come quick! Someone's beating up my father!" The neighbor and the boy ran back to the boy's house. Inside they saw two men fighting. "Which one is your father?" the man asked. "I don't know," the boy replied. "That's what they're fighting about!"

That boy might well have been that device or tool of the organizational designer we call "Line and Staff." The two men who were fighting may have been a military and a civilian practitioner of the art. For some time they have not seen eye to eye about the development of this lad.

Just before we entered World War II, an eminent management firm made a survey of the organization of some of the topside offices of the War Department. "What do they think they're doing here?" one staff officer asked. "They learned what they know about organizing from the military." And they had. It was an Army board that had studied the War Department reorganization which was put into effect.

There is some risk in assuming the role of the man whom the boy brought to stop the fight. Yet it might be profitable to know what the military and civilian organizational planners have done to line and staff as the years have passed. To this end, what seems to be the natural evolution of this tool or device will be described, and then the more important distortions caused by this artistic conflict will be enumerated. Before doing so, however, another example will describe line and staff in its pristine purity.

When all wars were small, during a battle the leader had his entire army within his sight. He directed it by the sound of his voice or the sound of the bugle. His soldiers' weapons were forged at the local smithy. They lived off the country and

were paid with a share of the loot. Around the leader were only those flunkies who looked to his physical needs and those of his horse. This was a pure line organization.

Came a time when wars and armies increased in size. Orders had to be written to direct the battle, and had to be carried by messengers. Weapons had to be purchased from arms makers. Food for men and horses had to be carried along. Soldiers had to be paid and, consequently, rosters had to be kept. Faced with these problems, the always decisive leader made two important decisions: first, he would learn to read and write; next, he would surround himself with people who could perform many of these tasks for him. These people constituted the first staff. Their job was to do for the leader those things he would have done himself had he the time and the know-how.

It was not long before those commanders immediately under the peerless leader also acquired a staff; then, those below them did likewise. This addition of a staff to a line leader came about through the need of the leader for help in doing his job. So line and staff was born.

So much for the fairy tale.

LINE and staff was employed almost exclusively by armed forces until about the beginning of our century. Then, as large civilian firms came into existence, their size demanded that help be given their leaders. A form of line and staff organization was contrived to meet the demand. It is difficult to determine whether this was a purely civilian invention or whether it was inspired by the military.

However, several things are fairly clear: civilian line and staff organizational designers have gone out of their way to keep their creations from appearing to be copies of the military, and to avoid the use of military terminology. A whole

new class of highly paid people known as "management" has arisen to man the civilian organizations, to fill the positions of officers who man the military ones; and a whole series of "schools of business administration" teach those prospective managers, as well as an occasional officer sent to them by the services.

### The high cost of fear of a "general" staff

The public still clings to the idea that staff is of military origin. Possibly from its acquaintance with the German General Staff during two wars, the word has become opprobrious. As a result, there is a great and unreasonable fear of a large staff. Because of this fear—which the public has transmitted to its legislators—the security of our nation is imperilled by a shoddy organization of our Department of Defense, and the President is deprived of the large staff he needs.

The size of their staffs restricted by public opinion, the military services have forgotten how to handle large ones. Worse, in order to give top commanders adequate staffs, they have resorted to the subterfuge of placing next subordinate commanders on staffs, thus giving them dual and incompatible duties. Besides, the services have distorted the meaning of the word "line," by using it to mean "combat"; for example, "a ship of the line."

In order to determine the distortions in line and staff which have been caused by civilian management's prejudice, public fear and military expediency, this device should be examined as it might exist today, in either civilian or military applications, if these distortions had not been introduced. To make this examination, a simple organizational ladder of five rungs serves as an illustration.

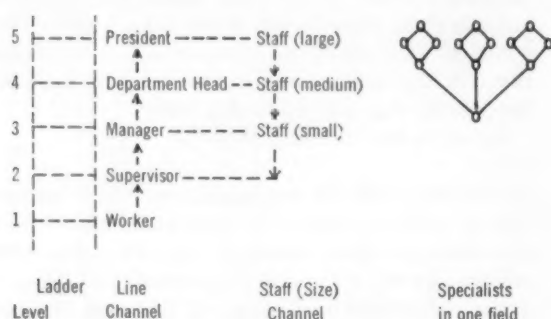


Figure 1

### Organization of the staff

Beginning at the bottom with the worker, a "line" can be drawn upward through the supervisor and managers to the President. This is the *line channel*. Each staff belongs to the leader opposite it.

Notice that the supervisor has no staff—for an excellent reason. The worker should be directed by only one man, and not confused by having to deal with members of a staff. The supervisor has other distinctions. His is the lowest level of management, yet he is its most important member because he is the image of management the worker receives. More often than not, his instructions are given orally. He is a line leader, and as such he resembles very much the peerless leader of the days of small wars.

At the third level, the manager has a staff. Once the staff emerges it must be repeated at all higher levels. It is at these levels that line and staff relationships may be defined and the organization and operation of a staff described.

The line going downward through the staffs is the *staff channel*. Interestingly enough, it ends at the supervisor, who has no staff. Here there is a relationship between line and staff which applies to all levels. A staff must serve not only its own manager or leader, but also all the next subordinate leaders. The staff is particularly necessary in the case of the supervisor. He can turn only to the staff of the next higher line leader, particularly for those things he is not able to do.

At all hazards, this relationship of a staff to a subordinate leader must not lead to the use of the staff channel for transmitting the orders and instructions that belong in the line channel. The procedures of the organization must be written to prescribe clearly what goes in each of these channels.

At levels above the supervisor, this assistance of a staff to a subordinate leader usually is transmitted through the subordinate leader's own staff. One method of using the staff channel for this assistance is to utilize the specialists in the same field on the staff of each level. Figure 1 shows one such specialist on the staff at the third level, three at the fourth, and nine at the fifth. For example, the specialist at the third level could be a mechanical engineer. The three at the fourth could be mechanical engineers who are further specialized in power generation, heating and ventilating, and plant engineering. Power generation at the fourth level could be further specialized at the fifth into nuclear-fired boilers, chemical-fuel-fired boilers, and internal combustion engines.

It is apparent that specialists in a single field at all levels should be encouraged to get together frequently and to maintain a constant, informal flow of correspondence in the staff channel. In this way, each staff can assist the leaders at lower levels by increasing the skill of the specialists on their staffs.

Two other things become equally apparent. First, the number of specialists, and hence the size of the staff, grows as the levels are ascended.

To illustrate, there is the general who took command of a unit whose G4 and one of its technical service officers had previously served under him. They had known the general as a specialist in their fields. It took some pointed words to convince them that he was no longer a specialist, and that he would not perform their staff functions.

strong suggestion that the vice president will be the next president.

This triumvirate of president, vice president and chief of staff should head all large organizations. Also, a similar triumvirate should head a large staff. The chief of staff should have two deputies, whose duties can be determined from their titles: deputy chief of staff for coordination, and deputy chief of staff for means (or logistics). The first deputy may have alter egos who coordinate planning, the day-to-day execution of approved plans, and the review of past operations. The second may have alter egos in the usual fields of men, money, and materials. On charts or diagrams of the staff these people should not be on different layers or levels.

## In praise of committees

There should be no levels in a staff of any size. The organization of the staff must be very fluid in order that the specialist or expert may be used to his full capabilities. Consequently, there can be no rigid organization chart for a staff. The preparation of a staff paper should involve all those on the staff who know its subject. The most useful organization is a committee which dissolves with the completion of the paper. It is obvious that this ad hoc committee should be chaired by one of the coordinators; for example, a planning committee's chairman should be a planning specialist. The temporary committee is the best device for giving fluidity to the staff organization.

However, this freedom of the staff specialist will be lost to the organization unless those who do the spade work in preparing a paper are required to present it to the president. The specialist must be given the privilege and inducement which comes from the knowledge that he, personally, is doing what the president would have had the time and ability. Also, the president is entitled to the best information he can get in arriving at his decision, and the best comes from the staff specialists who prepared the paper. Some of the pick-and-shovel men on the staff have called this "the right of direct access." The presidents who respect it get the best staff assistance.

In a large staff there is a great need for an office of assignment and record. Someone must assign the staff specialists to committees, provide committees with secretaries, keep track of the progress of preparation of papers, and handle the staff's administrative work. The military services call him a staff secretary because this officer receives and dispatches all correspondence and determines whether outgoing communications are to go through staff or line channels. Regardless of title, he is a most important man in the staff organization.

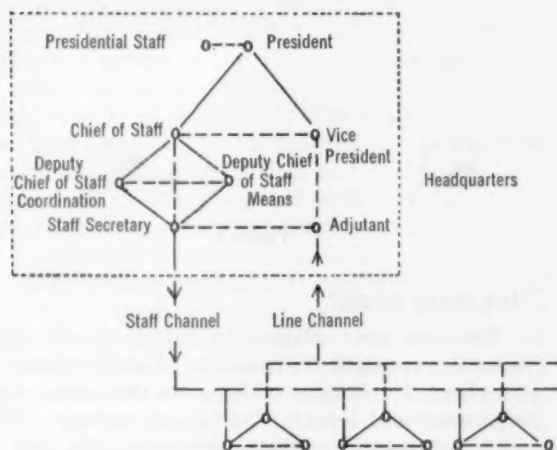


Figure 2

### Composition of the staff

The top staffs are usually provided with a chief of staff (see Figure 2). Too often he thrusts himself into the line organization by endeavoring to become the alter ego of his president or manager. Where there is a chief of staff there must also be a vice president on the line side, for no other reason than to keep the chief of staff in his proper place. But there are other reasons. The subordinate managers are entitled to representation at the top, and the vice president is their representative. Also, there are many reasons for either the president or the vice president to be absent, not only to supervise the organization, but also to perform the many community and other public tasks which men of this caliber must undertake both for themselves and for their organization. It has been said that the president and the vice president should be allotted a single desk and chair, so that they cannot be in the office at the same time. Also, it has been suggested that they be called co-presidents. There should be a



Corresponding to him in the line side should be an authenticating officer whom the services call an adjutant. In business, he is sometimes known as the secretary of the company. Through him flow the papers in the line channel. While some detractors have called him a glorified file clerk, he has considerable to do with the smoothness with which the organization functions.

### The personal staff

The last group in the headquarters is the personal (or presidential) staff. The head of an organization at or near the top of the ladder is entitled to certain personal assistants. It is questionable whether these people can accurately be called staff. Perhaps "entourage" is a better word. The composition of this group varies with the desires and characteristics of the top manager, whom they assist. In military units the group begins with such lesser lights as an aide, a secretary, and a chauffeur. Some have added members of the professions: a doctor, a lawyer, a chaplain. Others have put personal friends in this group.

There is almost certain to be some friction between members of this group and the chief of staff. Some leaders have put these people under the chief of staff, which makes little sense; others have made the chief of staff a member of the group, which is equally foolish. The people in this group are free-wheeling assistants and informants of the leader whom they serve. While at SHAEF, General Eisenhower named them "The Inspectorate." Some business leaders call them "full-time consultants." But whatever this group is called, they are necessary.

### Flow of information

This theoretical picture of a contemporary line and staff organization would be incomplete without some reference to the flow of information. For this purpose both line and staff channels must be kept open. The flow of information upward is a most difficult task to perform and usually must be assisted by "suction pump" methods from above. Too often it is accomplished by multitudinous and unnecessary reports. Frequent inspection is a much better device.

The flow of information downward through these channels is so voluminous that each staff must perform a screening function. The flood of papers which comes from above should not simply be passed on down. Papers must be sorted, digested, restated and edited to make them useful and understandable to those who receive them. This screening is particularly necessary for the third-level staff to perform, because what goes down to the staffless supervisor must be in such length and language that he can transmit it orally to his workers. The task of screening should not be left to him.

The line and staff device can be of great assistance in securing a proper flow of information, both up and down. By providing a sufficient staff, a large number of subordinates can be placed under one leader and thus the number of rungs in the organizational ladder can be reduced. An absolute minimum number of levels in an organization is worth all the gold in the vaults at Fort Knox.

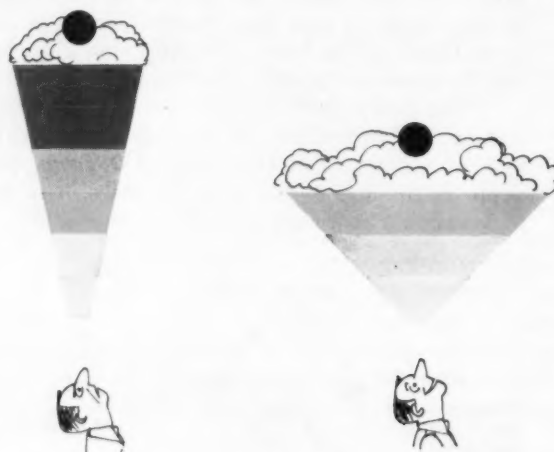


Figure 3

### How many levels?

The two soda glasses in Figure 3, of equal volume, represent the number of staff officers or members. The horizontal lines are the rungs on an organizational ladder. The spaces between, filled with different flavorings, represent the size of each staff as well as the different viewpoints of the organization at each level. The worker's view of the top side of the organization is mighty dim through the tall, narrow glass on the left. The whipped cream on top, which is the top staff, totally obscures the cherry topping it, which represents the big boss. It is quite evident that the worker has a much clearer view through the few flavors in the short, wide glass, particularly because the whipped cream is spread thinner across the top. The cherry is much nearer and much more visible. Communication between top and bottom is much easier in the wide glass than in the narrow one. In organizational terminology, the number of levels in any organization should be kept to the absolute minimum.

### Distortions by prejudice

Having created this theoretical line and staff organization, let us identify the major distortions introduced by civilian management's prejudice, public fear, and military expediency. Perhaps the greatest difficulty in today's organizations is the failure to provide in procedures the necessary in-



structions for the proper use of the line and staff channels. The resulting misunderstandings are manifold. This matter requires the constant attention of management.

The association by the military services of the word "line" with "combat" has resulted in placing line ancillary units in the staff, by both military and civilian organizational artists. The result, of course, is a confused image of the staff throughout the organization as well as a very much overstrength staff. Perhaps the touchstone as to what is staff and what is ancillary line is the recipient of the service rendered. If the service is for the leader and the next subordinate leaders as individuals, it is rendered by a staff. If it is for units or other persons in the organization, it is rendered by a line ancillary unit.

For example, the personnel section of a unit frequently is considered part of the staff. To administer personnel is not a staff function at all. This is a service to the whole unit, not just to the leader. The service to the leader in the personnel field which is provided by the staff consists of making personnel plans, policies, and procedures, supervising their execution, and evaluating their effectiveness. The personnel section which administers them is a line organization and should not be considered as part of the staff.

Even though the ancillary unit may be charted as "line," there is a great tendency, particularly in the military services, to put the leader of the unit on the next higher staff. Chances are he will do neither his line nor his staff job satisfactorily. It is an obvious effort to keep the staff small, which has erroneously become a virtue in the eyes of modern organizational artists.

### Keep line and staff distinct

Nor should a staff officer be permitted to head a line unit. This is not the previous situation stated in reverse, but quite a different one which is likely to creep up unexpectedly in large units. It results when a staff member who has done the planning for a future operation holds on to its conduct after it is implemented. A wartime example of how the staff should function in this regard can be taken from the inauguration in the China Theater of the operation to recover Allied prisoners from Japanese POW camps. The theater staff planned the operation, designated the personnel, obtained the transport, and earmarked the supplies. It turned the whole business over to Services of Supply, the next subordinate unit, to implement and administer. In turn, SOS created a line unit for the purpose. Many a less wise theater commander would have kept the control of the operation within his own staff, with much resulting confusion.

Almost by definition of the terms, a line leader

cannot double as a staff member, nor a staff member command a line activity. Yet, perhaps from failure to recognize what is line and what is staff, these conditions are found in both military and civilian contemporary organizations.

Another thing that can be decried is the failure of the civilian organizational designer to use some of the military organizational titles. Such terms as chief of staff, staff secretary and adjutant are so clear and descriptive that they add greatly to the understanding of the organizational structure by all who are part of it. Yet, apparently from prejudice, this is not done. This results in some lapses in organizational design.

For example, the triumvirate necessary at the top of all large organizations is missing in our government. While there has been much talk of an "Assistant President" to head the White House staff and of using the Vice President to head the Cabinet, whose members are the line leaders next subordinate to the President, nothing has been done to make it official. It is interesting to note that the title "Assistant President" is suggested instead of the more accurate and much clearer "Chief of the President's Staff."

The military services themselves are guilty of overlooking the necessity for the triumvirate at the top of their large organizations. For example, the Navy assigns a single officer to the two jobs of Chief of Staff and Vice President (Deputy Commander). What a turmoil he must be in! Likewise, the three—or four—heads of the military services are, by Presidential decree, required to spend a large percentage of their time on their activities as members of the Joint Chiefs of Staff. What chance has the triumvirate in each service to operate? For the price of one man in each service, there has been erected an organization which produces confusion rather than efficiency, because line and staff have become intermingled.

Perhaps the greatest distortion of the line and staff concept has been made by the line-trained organizational chartists who have imposed a rigid organization on the staff. This is particularly the case in the Army, with its general, technical and administrative staffs. The flexibility necessary in staff operation does not permit rigidly placing its members in boxes. The extension of this flexibility to large staffs seems to have become a lost art. Yet it is by the use of large staffs that the number of organizational levels can be reduced—the greatest boon the device of line and staff can give to organizational operation.

This review has been quite general. Yet a basic understanding of this organizational device can be of great value to the person who is part of a large organization. It can show him the way to promotion.

(Continued on page 73)

## *The Soldiers' Own*

*From Saigon to Stuttgart U. S. soldiers give tangible expression of American good will to all men the year around* **CHARLES S. STEVENSON**

**A**T THIS Christmas season it is worthwhile to consider for a moment how American soldiers in foreign lands practice Good Will Towards Men . . .

When the 4th Army Missile Command was activated in Korea several years ago, the officers and men of the Command decided they should do a little more for Korea than guard it.

So they adopted an orphanage of 35 blind children, ages 3 to 16. The Chunchun School for the Blind was desperately in need of help. It was operated by a middle-aged Korean, himself blind. The youngsters slept on straw sacks on the dirt floors of a straw hut. In the daytime, classes were held in the same hut. There was no play space around the hut and the children had to be led across the lane to an open field where they could run and shout.

The troops of the 4th Missile Command set about to improve all this. They donated money to purchase a very small piece of land and to build on it a simple frame house of sleeping rooms and class rooms. When blankets and clothing became a problem, letters home brought them, and the blind children were warmly covered both day and night for the first time in their lives.

Next, the troops gave the orphanage the assurance of meeting expenses, such as books and necessities. The only exception was food—which was furnished by the city. Several months ago the Command raised enough money to buy eight acres of nearby farmland and hired a manager to operate it. The proceeds will all go to the orphanage.

Heart warming?

Of course!

Unusual?

By no means. This compassionate gesture of the 4th Missile Command toward the helpless children of a foreign, and even non-Christian country, has been repeated in other countries of



# ***Trooper-to-Tot Programs***

the world by hundreds of thousands of American troops multitudes of times before missiles were front-page copy. The few examples I single out for mention here are not unusual. There are others just as heart-warming and just as deserving of mention, if I but knew of them.

**T**HE Holy Family Home, an orphanage in Osaka, Japan, was adopted several years ago by a regiment which has since given it over a quarter of a million dollars. The proceeds of a military movie theater in Tehran were presented to two orphanages there. American troops in Aschaffenburg, Germany, joined in an effort to save the life of a 21-year-old German girl in need of an operation. Orphans of such distant remote areas as Nha Trang, a pleasant coastal town in Vietnam, halfway between Saigon and the 17th Parallel, have received a cash contribution from an Army civilian employee. The "Village with No Name," a colony of 1,800 lepers in Korea, was receiving fuel, food, clothing, medicine and cash from American soldiers as far back as seven years ago. "Toys for Tots" is as familiar in Germany as it is in America. Americans based in Turkey have made it possible for the Turkish School for the Blind to have Braille typewriters.

The generosity of American troops moved someone to say: "Christmas may come but once a year for American children, but for the youngsters of the nations where American armed forces are on duty—just about every day is Christmas!"

The adults of foreign countries are also beneficiaries of American generosity. This, however, is more of a directed type of activity—a community relations program, as it were, but participation is generally optional.

Servicemen have supplied hybrid corn seed, and prize sheep to people in Port Lyautey, Morocco. Another group helped establish a rehabilitation center in Mexico. Seven enlisted men and their families purchased tatami mats for needy families in the Wakamatsu apartments in Tokyo. Army physicians are serving as teachers in Viet-

nam medical schools. The Naha Officers' Wives Club on Okinawa gave record players to three different old folks homes on the island.

Projects range in scope and variety from those requiring the use of bulldozers, pumps and trucks to the lone soldier walking to a nearby Italian monastery to teach English to the monks. They include flood and typhoon relief, tours through Army installations, the development of nurseries, Bible classes, irrigation help, donation of labor, classes in cooking, doll-making, the arts, languages and country customs, exchange visits in homes, band concerts, athletic events, and the like.

Observance of Christmas, Valentine Day, Armed Forces Day, festivals of the nations and both happy and sad occasions serve as mirrors to allow American soldiers to reflect the exact image of Americans that all Americans would like to have the world know.

And so it goes—world-wide and unit-wide!

**T**HAT various of these projects, particularly those of an adult nature, have some command direction detracts but little from the spontaneous and voluntary flavor of American participation or of the appreciation of the recipients. The command leadership only organizes, coordinates and conserves time and energy which would undoubtedly be forthcoming anyhow. This is proved by the fact that the shifting of personnel makes little difference in the end results.

All of this may be categorized currently as a People-to-People movement. In fairness to the troops of the armed forces, however, it must be recognized they had their own People-to-People program long before President Eisenhower gave the phrase the personality it has today.

It is further likely that if statistics were available, which they are not, they would support a statement, made by one who should know: that the American troops based in foreign countries are probably more effective in making friends and influencing people of other countries than all the rest of the U. S. civilian population put together.





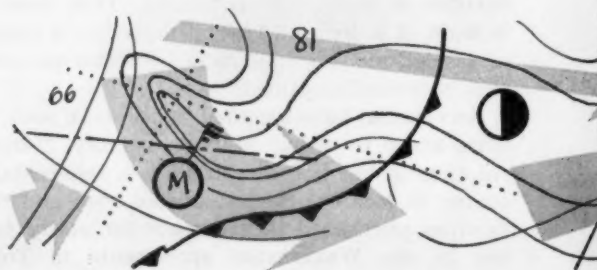
# DELUGE

Weather control is a political, psychological, economic and military instrument of both surgical and meataxe proportions

**Col. ROBERT B. RIGG**

**W**OVEN into the remote potentials of space warfare, the probability of limited wars, and unlikelihood of thermonuclear conflict, is a rare and frightening form of international conflict very realistically on the horizon of the future. This new and devastating form of warfare could bring wholesale misery and death to civilian populations and hasten the collapse of opposing governments—all without the direct use of military forces because one of its distinctive features is that of remote control. This future method of international conflict is weather control.

Offhand, weather control itself appears to be quite distant, and perhaps it is. However, it appears no longer questionable whether man can





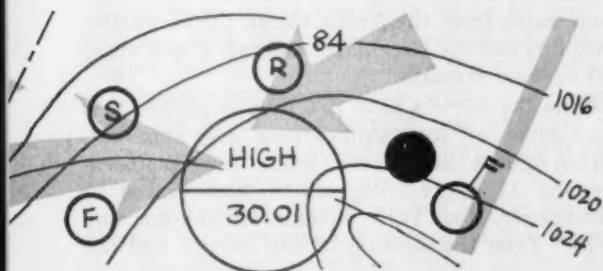
# R DROUTH

modify the weather and control the climate but rather "which nation, the U. S. or the USSR, will do it first." Presently, "We know the Russians are devoting great energy and scientific talent to learning how to control the weather. It is urgent that the United States not fall behind in this race." Those were the words of Representative Henry A. Dixon before a subcommittee of the Committee on Interstate and Foreign Commerce of the House of Representatives on 18 and 19 March 1958.

Weather control is a political, psychological, economic, and military instrument of both surgical and meataxe proportions. Potentially, if a single belligerent were able to create it and retain a monopoly on the technique, it could become the most subtle-violent, formidable weapon available to man, because such a monopolist could wage indirect secret warfare. Furthermore, the target nation made to suffer from this futuristic weapon might merely believe it was a victim of Nature and physical catastrophe. Obviously, in this instance the aggressor need not declare war; he would simply wage it secretly from afar.

## Effects on the economy

In its harshest form, weather warfare has this potential: economically, a nation's harvests could be wiped out, virtually overnight. A democracy



or a dictatorship could conceivably collapse in the famine ensuing from the chaos of mass starvation. In the face of migrant mobs of milling millions sweeping outward from the American Midwest, the Ukraine, or the China plains, what government could effectively cope with the problems of wholesale famine and flood unless it had large reserve stocks of food? Consider also that such weather warfare technique might next be reversed by an enemy and turned to trap the refugee millions in violent blizzards and storms of hail, rain or ice. The armed forces of any nation so attacked, if not directly affected by the weather, could be so diverted into assisting in national survival measures as to virtually paralyze their military effectiveness.

More than two years ago, Captain Howard T. Orville, U. S. Navy, retired, who for four years headed President Eisenhower's Advisory Committee on Weather Control, stated, "If an unfriendly nation gets into a position to control the large-scale weather patterns before we can, the results could be more disastrous than nuclear warfare."

The potentials in achieving the means of waging weather warfare may be divided between relatively earth-bound measures and those which might be undertaken from space or space vehicles.

#### Space measures and potentials

Long ago, Dr. Hermann Oberth, a German scientist, foresaw that it would be possible to "hang" a giant mirror in space so that it reflected light and heat upon the earth. Present-day progress in earth satellites promises future space vehicles which could carry such mirrors. In this connection, some six years ago A. A. Shternfel'd of the USSR, an International Astronautics Prize winner, stated: "Certain investigators have proposed to establish on artificial enormous mirrors reflecting solar rays to the earth and thus to heat and illuminate great areas of the terrestrial globe. These projects are insufficiently developed, however."

Such light-heat beaming mirrors could have peacetime uses as well as military applications. Also, they could be cold war or economic measures of either benefit or detriment to mankind's efforts on earth. For example, in peacetime they might be used to provide measures of increased visibility (if in sufficient volume) for harvesting and construction. Conversely, such mirrors reflecting the sun might be used to light up and harass communities and cities in a cold war by permitting them no true darkness at night. These space mirrors might also be so focused as to raise hot temperatures in certain areas to unbearable heat and cause a variety of still unperceived phenomena.

Of course, the first step in harnessing the weather lies in the knowledge to be gained from observation satellites such as the National Aeronautics and Space Administration's Tiros I which was launched in April 1960. Clouds are the tattle-tales of weather and weather to come, and the world's meteorologists have long been seeking cloud-pattern pictures of the entire globe. Tiros I demonstrated the practicability of such survey. However, to survey clouds over the earth's entire surface could require up to several such satellites orbiting simultaneously. Such a system will permit long-range forecasting, perhaps for an entire season.

Another potential space means of possible control of the weather may lie in high-altitude nuclear and thermonuclear explosions. This atoms-in-the-sky concept, however, is a field that will require much more scientific exploration. However, basic physics have established that certain meteorological phenomena can be produced by such explosions which can also affect the earth's magnetic field.

#### Control potentials on earth

In addition to great schemes to divert the course of several of its rivers from the Arctic Ocean to the Caspian Sea, the Kremlin has boasted of large projects that would upset the entire wind circulation pattern of the Western Hemisphere. According to Captain Orville, the Soviet Union has "conducted numerous unpublicized but still detectable experiments apparently aimed at finding ways to speed the melting of polar icecaps; and has even offered to join the United States in a project to turn the Arctic Ocean into a sort of warm water lake by melting the polar icecap."

Lacking warm-water ports, the USSR could profit militarily and economically from such an effort, and their quest here is understandable.

In December 1957, Arkady B. Markin, a Soviet engineer, proposed that an international team of scientists cooperate in constructing a dam to redirect the waters of the Pacific Ocean in order to relieve the severe cold of the Northern Hemisphere. "Such a dam built across the Bering Strait would be fitted with thousands of nuclear energy powered pumps that would pump the warmer waters from the Pacific into the colder Arctic Ocean. At other times the pumps . . . would pump water from the Arctic Ocean to the Pacific, cancelling out the Greenland, Labrador, and other cold oceanic streams."

While the Soviets have not fully explained this plan, some of its ramifications are apparent. Markin figures that the dam would raise temperatures by 11 to 14.5 degrees in such places as Vladivostok, New York, London, Stockholm, and Berlin. Then the melting of the icecaps and the

unleashing of landlocked waters would cause sea-coast cities and towns to be flooded by the expected rise in sea levels. Thus, the price of warm ports for the USSR could be at the expense of flooding certain coastal areas of Western nations. It is obvious, says Captain Orville, that "weather control can have frightening and disastrous consequences if any unfriendly nation succeeds in gaining a breakthrough before we do."

Dr. Edward Teller, the H-bomb scientist, remarked a few years ago before the Senate Preparedness subcommittee: "Please imagine, a world . . . where [the Soviets] can change the rainfall over Russia . . . and influence the rainfall in our country in an adverse manner. They will say, 'We are sorry if we hurt you. We are merely trying to do what we need to do in order to let our people live'."

Shade by shade, glamorous lipstick has within it a subtle chemical (hexadecanol) that has potential warlike uses. This tasteless chemical film is a potentially efficacious water-sealer. It is also a potential military weapon because it can seal in bodies of water and reduce evaporation. If used on a large scale, this chemical sealer could deprive adjacent land areas of rain. To fathom ways to control during peacetime moisture balances between land, air and sea, the U. S. Geological Survey's laboratory in Denver has experimented with chemicals such as hexadecanol. Why? Because the future's most precious element may be not gold, but water.

If water can be sealed off to beneficial or harmful effect, then the opposite is true. There are other chemicals that can be employed to speed the evaporation of water. Thereby, rainfall could be increased.

### The defiant polar regions

One real key to earth-bound measures for controlling airborne weather lies in the Arctic and Antarctic icecaps. These two iceboxes of the world are like lions defying the most skillful trainers because they breed the world's coldest fronts—all having profound influence on the bipolar political world.

It has been predicted that if there were a technological remodeling, or thawing, of these frozen regions—in the North Pole area, for example—ocean levels would rise from 40 to 90 feet! It requires little imagination to realize what would happen to London or New York if a mass of powerful sun-reflecting satellites were to be beamed from the Arctic by a foreign power already prepared to elevate or abandon its own coastal cities and rebuild anew.

The nuclear blowtorch method of blasting polar icecaps is rather ominous because it is a present-day potential of mean proportion. Atomic-bomb

bursts by the score might not cause a deluge of water, but they could warm cold water to a dangerous degree. However, before man undertakes any such measures he must be sure what the over-all effects will be. There is expert knowledge to attest that experimenting on any wholesale scale on the basis of imperfect knowledge could induce weather effects which could boomerang on man even to the point of initiating the return of gigantic glaciers of a new ice age.

For strategic reasons, the Soviets long have been interested in the Arctic, and the USSR is regarded as technically far advanced in polar meteorology. Since 1937 the Soviets have been sending large expeditions into the Arctic basin. In the words of Dr. Harry Wexler, Chief of Research of the U. S. Weather Bureau: "They make our own efforts look puny by comparison. They have done excellent work in climatology, and in basic cloud physics. They have much greater facilities for studying weather."

### Implications of weather warfare

Assuming that eventually man gains the knowledge and know-how to reshape portions of Nature, how might weather control and influence be put to military use? Here are some possibilities.

An aggressor might choose to bring an enemy to its knees by measures already alluded to: mainly through damage to crops, light and heat harassment to certain localities and communities, and the like. Here the aggressor's purpose would be to weaken the opponent economically and psychologically by sudden harsh blows, or in political cold war to accomplish the same purpose but on a more restrained scale of economic and psychological hindrance.

A defender's first recourse in event of an attack by weather warfare would be defensive-offensive. That is, with its own knowledge and means it would have to seek a quick way of neutralizing the attacker's weather impact on his country. At the same time, the defender would seek to restrain the enemy's further efforts, then follow up with an offensive of Nature.

While as yet there is no precise knowledge on the meteorological means, reactions, and phenomena that might occur under these future conditions, nevertheless, for the sake of simple illustration we may visualize some on the following order.

East is the aggressor, and inflicts rain and consequential flood on West. The latter would have to immediately respond defensively with a means of reducing water evaporation so as to prevent further rainfall. The already inflicted rainfall and floods would have to be accepted as war damages with their inherent economic, human and industrial casualties. At the same time, West



would have to select the type of target with which to destroy East. Again, this might be rainfall for flooding dams and cutting off electrical (and industrial) power, damaging crops, and so on. Or West might, if it possessed such means in quantity, send a whole series of mirror bearing satellites into orbit for the purpose of focusing—in the manner of a magnifying glass focusing the sun's rays—intense heat on cities, forests, and crops so as to create fires and damage East's resources.

There might be a combination of means of counterattack. While the distant means to wage such warfare are barely suggested—because as yet they are unknown—it does follow that nuclear devices (atoms-in-the-sky explosions) could also come into play. Here, then, could arise several new dangers if one belligerent considered or interrupted the use of such devices as the initiation of nuclear warfare itself. Thus, certain potential means of waging weather warfare are possible powder kegs that might cause the initial conflict to spiral and expand. However, possible weather weapons in themselves could be as destructive as thermonuclear weapons.

Inherent in future weather warfare is the grim fact that the measures and countermeasures of both sides could boomerang, not only on the combatants, but could seriously affect neutrals, who in turn might resort to use of arms. In plain fact, the forces of Nature are both powerful and capricious, and they will probably never become fully fathomed by and known to mankind.

Very obviously, in any form of conflict weather control could be related to military operations. The implications are so apparent that they need not be mentioned. One only has to recall that in 1588 a storm swept the Spanish Armada into oblivion and the course of history was changed, just as weather had similar impact on the historic courses of Napoleon and Hitler.

### Future facets in finality

While it is natural to speculate on the horrors, there are other facets to weather warfare. This is not an affair involving two sides of a coin, but six faces of a die. Point one is the horror side: man to man. Point two is another horror side: man to nature, as just cited. Point three is the possibility that man may never be able to so control weather militarily that it can be used solely against a single nation. In this eventuality it might become the weapon of a coalition, if geography favored the coalition. Point four is the fact that while man may be able to control meteorological conditions, he may find that the control forces produce results of such magnitude and grim form as to outlaw their very use—or there may occur meteorological deterrence and parity.

In this connection, Captain Orville has emphasized that it "is essential to have some international cooperation in this field, possibly through the UN."

Point five, weather control is double-edged, being both a peacetime over-all instrument as well as a military weapon. Conceivably, its peacetime beneficial application by one nation would produce detrimental and disastrous effects in another. Thus, in a world atmosphere of peace, in the interests of the survival and well-being of all nations, it is possible (although not probable) that the two-edged weapon would have to be placed under international control.

Finally, the so-called weather weapon will probably have varying degrees of perfection and usage. Like any other instrument in the hands of man, it will be imperfect and always subject to failures and inconsistencies that tend to give a balance of power to the side which can best create, operate, and exploit it. Also, there may even be geographical and other limitations which will restrict some approaches and techniques to means of weather warfare. This sixth and last point recognizes that while man has brought many elements of Nature under his control, he does not control them in their entirety. So it may be in respect to controlling and exploiting weather.

**I**N conclusion, one may ask if it will be possible eventually to control weather? In the opinion of several of our leading scientists the answer is Yes. In the words of the late Dr. John von Neumann, "Probably intervention in atmospheric and climatic matters will come in a few decades, and will unfold on a scale difficult to imagine at present."

The potential scale and proportion of this futuristic weapon have led another authority, Dr. Henry Houghton, to equate the matter in these terms: "International control of weather modification will be essential to the safety of the world as control of nuclear energy is now. Unless we remain ahead of Russia in meteorology research the prospects for international agreements on weather control will be poor indeed. An unfavorable modification of our climate in the guise of a peaceful effort to improve Russia's climate could seriously weaken our economy and ability to resist."

Harsh weather has been a traditional ally of the Russians in war; economically it has been their enemy in war and in peace. From an economic standpoint, the Soviets and their satellite nations stand to benefit more from weather control than any other combination of nations. From the over-all viewpoint of Communist power and its own aims, weather might be a weapon with which to "bury" us.

*Our strategy must catch up with our technology and so also our organizations for battle*

Col. ALLEN C. MILLER, III

# MAXMAR

*means Maximum Mobile Army*

**T**ECHNOLOGY has had a tremendous input on land warfare during the past decade. But it has also helped create serious imbalances between the tactics, equipment, and organization of our field forces. Such imbalances are those between the requirements for mobility and what we have to provide it; between our planned transportation and the logistics requirements which are necessary to support field operations successfully.

To rectify these imbalances a critical reappraisal must be made of existing means and forces. For example, warhead development has progressed far beyond the capability of current weapons systems to effectively use them. The indiscriminate application of force in any form may have serious disadvantages. Over-killing could be as disastrous in halting a "brushfire" as the use of a 16-inch gun could be to intercept a robber in Lower Manhattan. Weapons selection is always a major consideration in the application of force, and it is particularly important in limited wars. Area weapons are seldom the answer. Even the blanket application of nonlethal agents could prove disastrous.

The ability to find, identify, and apply measured force to all kinds of targets is a prerequisite for supporting the national objectives of this country. Warhead selection should be based on the required target effects. Obviously a high degree of selectivity of warheads is required for our tactical forces. These we have. But we lack efficient weapons systems to get full use out of them.

## **Swollen munitions and overkilling power**

In both World War II and Korea, great quantities of conventional munitions were required to achieve the required destruction. Ammunition requirements per delivery unit steadily increased, which expanded requirements throughout the combat zones and in the entire logistic backup. Nuclear firepower reduces the size and weight per unit of destructive force, but it has not solved the problem of expending more energy than necessary to kill or neutralize a tactical target. Areas must now be blanketed with firepower, regardless of the type, to insure a kill on an individual target.

The potential lethality of all types of modern warheads has resulted in decrease of the density

of our forces within a tactical theater of operations. New doctrine and organization have been adopted to adjust to the enemy threat, but the net result has been little more than to increase distances and decrease manpower while employing essentially the same old weapon systems and tactical transport that we used in World War II. Future reactions to the threat of enemy area weapons probably will be attempts to increase the mobility and selectivity of our delivery systems.

A delivery system is no more effective than its weakest characteristic. Range, payload, accuracy, cost, complexity, reliability, and target information are among the many factors that may limit a delivery system. The ultimate purpose of such a system is to deliver the right load, at the right place, at the right time. Unfortunately, our present ability to achieve this basic objective is limited. With the deficiencies in our present delivery systems, quantity has become a substitute for quality. Therefore, there is a reluctance to give up obsolete weapons that were developed to fulfill discarded tactical requirements.

During World War I, firepower delivery systems were echeloned in depth according to their range and were protected by friendly lines on the ground. Since the surface dispositions were relatively stable, these tactics provided maximum security and flexibility as long as the mobility and observation were limited. This influence of pre-air warfare is still strong with current firepower delivery systems. In any future war, an immobile weapon unit cannot operate for long where the enemy has a high degree of mobility.

## **Integrated simplicity versus total complexity**

Everything else being equal, the mobility of a weapon will determine its effectiveness. Heavy artillery and large missiles will be used for certain missions; but for tactical operations, smaller, more mobile weapons possessing the same firepower seem destined to increase. The principle of integrated simplicity versus total complexity applies. For destroying a particular target, several simple warhead carriers acting consecutively (such as a low performance aircraft and a rocket) can often offer many advantages over a single, long-range carrier (such as a large missile).

In the broadest terms, each mode of transportation from factory to target constitutes part of the delivery system. A warhead can be just as effectively delivered in a suitcase as delivered by an ICBM. Sometimes warheads can even be delivered in advance, as in the sowing of mines. Short-range delivery of a warhead need not reduce its flexibility and does not when transported by a highly mobile carrier.

A good firepower delivery system must be both flexible and highly mobile. American artillery was eventually developed to a high state of flexibility by the capability of massing fire from different battery locations. Tactical aircraft, with their increased range, can apply the same principle deep in enemy territory. But manned aircraft have the great additional advantage of being able to find and take immediate action against a target. The airborne observer who has personally assessed a target complex may soon have a choice of several delivery systems.

It is feasible to give him control over the terminal trajectory of missiles launched many miles away, but the short range air-launched missile will often do the job quicker and more efficiently. With each of these methods of warhead delivery, we will have the capability of making corrections at the target rather than at the muzzle or launcher end. This will be an advance of great significance.

It appears that we must revise our classic concept of tactical and strategic operations. In any future world war it seems likely that the entire earth's surface will become one huge theater of operations. Forces will be shifted with great speed over very great distances to obtain a local tactical advantage. The surface of the earth will become a huge chessboard with the slower "pawns" reinforced overnight by airborne troops and long-range missiles. Concurrently with these temporary concentrations of power, we must plan to isolate the objective areas by the expeditious employment of antimissile and antiaircraft missiles. As soon as an objective has been taken our long range striking forces will disperse quickly.

The tremendous growth in world-wide commercial air transport has demonstrated the feasibility of large-scale, intercontinental air operations. Time and space factors have been revised. The same technical advances which have resulted in this revolution dictate the need for an adequate military capability.

There are other cogent reasons for making our Army forces completely air transportable. Firepower and mobility must be balanced. The U. S. can deliver tremendous firepower to any area on the earth. We can lay waste an enemy's homeland in a matter of minutes, but we cannot exploit this capability. As long as the enemy occupies a secure base with a few determined men possessing long-

range thermonuclear missiles, we and our allies are vulnerable to heavy punishment. If an all-out exchange occurs, we must be prepared immediately to fly in sufficient mobile tactical forces to seize and hold the sources of enemy power.

In all military actions short of general war, global air mobility for STRAC is an indispensable prerequisite to success. The total effort required to control a "brushfire" will generally be directly proportional to the reaction time required to get our first troops on the ground. Therefore, sufficient long-range airlift is our best insurance that "little wars" will not develop into big ones. The Army can no more use surface transport for its STRAC forces, than a fire brigade can use horses and wagons. We must have the minimum capability of delivering one army corps to any area in the world within forty-eight hours.

Our global transportation requirements must be reassessed. To achieve minimum military requirements for air transport, the present inventory of both inter-theater and intra-theater aircraft must be increased. Sealift for the major fighting elements of STRAC and TAC type of forces is too slow, too vulnerable, and too inflexible.

Our tactical forces must outmaneuver the enemy within the battle areas. In World War II, some armies increased their mobility by using trucks instead of animals for rapid tactical logistics. The NATO and Red armies are currently making another major advance in field mobility by substituting tracks for wheels to carry advance combat units. The United States is developing large-wheeled GOERS to give more flexibility to the supporting field elements. The next step is a new family of aircraft to take over many of the tasks now scheduled for surface transportation. Trucks and armored personnel carriers will give way to helicopters, convertiplanes, and "brush" type aircraft. These changes are the outgrowth of tactical necessity. Only through rapid air movement in the battle zone can we find and destroy the enemy with the least hazard to our forces.

The hedgehopping "bush" type aircraft also has many possibilities as an aerial delivery vehicle for rockets, guided missiles, bombs, land mines, and small arms. It can be adapted to carry small infantry patrols. New types of effective light armor, as well as heat shielding and decoys, will probably be used to give added protection. With adequate strike radius and speed, this type of aircraft can restore mobility to the battlefield and eliminate the need for vulnerable logistic support installations within the combat zone.

### The decline of tube artillery

As delivery systems, artillery will continue to phase out as more versatile missiles take over its functions. The inherent advantages of missiles



over conventional artillery and aerial bombs have not been exploited. Improved doctrine and tactics must be developed to capitalize on such characteristics as terminal guidance; the possibility of unlimited range; and extremely light, unsophisticated launchers. These characteristics together with air mobility offer an opportunity to revolutionize land combat.

Many problems must be worked out to adapt missiles to future mobile warfare. For example, blast is a serious problem. Guidance, particularly for antitank missiles, does not meet all our operational requirements. New designs for dual employment from either the ground or from low-flying aircraft are required. Fire control instruments to support efficient missile utilization must be developed. Trends indicate that missile requirements for Army forces will greatly increase.

As an initial step to optimizing a field force, we must improve our control procedures. Control may be defined as the exercise of command. It consists of the formulation and transmission of reports and orders, and is the key to mobility and effective firepower. Swift reaction time requires staff procedures and secure communications that reduce the time required for control, even during combined operations with other free world forces.

A complete operations analysis of control procedures at all echelons of command is urgently needed. Decision making processes should be reviewed. Automatic display and data processing techniques to assist commanders in making sound decisions are technically and operationally feasible. Automatic data processing (ADP) offers an opportunity to eliminate much slow and laborious staff work. In particular, the current staff procedures of the Army and Joint Staffs should be revised. The traditional four-section staff was compatible with field operations based on railroad logistics, but is hardly applicable to those which are geared to modern time and distance factors.

The current procedure of bringing the battle situation to the commander can be achieved with much less effort and improved reliability by taking the commander to the area of decision. Like the naval task force commander who places his headquarters on one of his fighting ships, a field force commander should normally accompany the unit that is making the main effort. An alternate command post attached to the holding force or to a reserve unit should be small, mobile, and capable of assuming full control with no loss of time or operational efficiency. Some of the advantages that will accrue from the mobile headquarters concept are local protection, decreased vulnerability, improved operational information, ease of coordination, and reduced reaction time.

One or more aircraft can serve as the mobile headquarters depending on the size of the unit.

Administrative, logistic, and detailed operational staff support, including planning, must be accomplished at a secure base beyond the zone of contact. Essential information can be consolidated at the unit base of operations and transmitted for decision to the mobile combat headquarters.

### The universal division

Let us consider the impact of these technical capabilities upon army organization. Our field forces will consist primarily of a new Universal Division having high tactical mobility within a combat radius of several hundred miles. Its equipment will be designed and it will be organized to travel globally in strategic transport aircraft. Supporting units of this Maximum Mobile Army (MAXMAR) will also be transportable by strategic airlift, although some of the heavier equipment may have to depend upon surface transport within the tactical theater of operations. The basic division will be designed to achieve a balance between firepower and mobility and to take the place of our present special purpose divisions. With mobility and firepower as a carefully balanced team, ground armor will become obsolete. The possibility of eliminating ground armor by air action was demonstrated in both World War II and in Korea, but the significance of this superiority was largely lost because of divergent development in our tactical air forces. With the passing of heavy ground vehicles, new types of aircraft and missiles will dominate the tactical battlefield.

Trial and error in both war games and field maneuvers will dictate the optimum Tables of Organization and Equipment for MAXMAR. However, the basic elements of a Screening Force, a Holding Force, and a Striking Force will probably be organized for the Universal Division. Success will depend upon complete integration of new air and ground equipment.

The Screening Force will be composed of "Sky Cavalry" units, whose mission will be to find and fix the enemy. In addition, Screening Forces must deny information to the enemy on the dispositions and movements of the main body of the division. Through their screening action they will strive to maintain the maximum, unimpeded maneuver area for their division, and concurrently try to limit the enemy's field of action. If successful, they will provide protection and lucrative targets for the division missile artillery.

The organic aircraft for the Screening Force must be tailored to the mission. They should possess above-average flying capabilities and in general will be of two general types: armored penetrators (flying tanks) and "cow pasture" fighters. Both types will fly at low altitudes and neither will require prepared airfields. When not flying,



#### THEATER STAGING AREA

From airports several hundred miles behind the zone of maneuver STRAC units are transferred to MAXMAR aircraft.

**MAXMAR**  
in action

#### THE SCREENING FORCE IN ACTION

Low-flying aircraft "fire and drop." Shock squads augment their action on the ground.





#### DEPLOYMENT OF A STRIKING FORCE

Troops quickly concentrate for the assault from concealed assembly areas surrounding the enemy

#### THE HOLDING FORCE ESTABLISHES A BASE OF FIRE

Borne by intra-theater transport aircraft, lightweight missile units prepare to fire

*Drawings by*  
**DAVID G. BEIGLE**





they are concealed or camouflaged in alert positions. The "Sky Cavalry" will normally fight from their air vehicles; however, they may contain parachute-ranger units for extending and augmenting the air action.

Missiles will provide the heavy firepower of the Universal Division. Division artillery consisting of air transportable, surface-to-surface (SSM), and surface-to-air (SAM) missiles will be the principal fighting element of the Holding Force. The SSM's will provide general and direct fire support for the Screening and Striking Forces. They will have limited ground mobility from lightweight, self-propelled launchers. As they will be a target for enemy action, they will "orbit" on their ground prime mover during an engagement, stopping only long enough to fire.

SAM's will protect against vertical attack within the division's area of maneuver. They will usually be leapfrogged into position by their organic air transport. When the division is extending its zone of action, this leapfrogging process will be continuous. SAM firing positions will be fixed when not being redeployed.

Headquarters and all logistic support elements of the Universal Division will be within the Holding Force. Tactical air transport for the Holding Force will be the largest and most conventional of the several types organic to the Universal Division, and will be pooled for general division supply when not moving organic units.

The Striking Force will be a powerful maneuver element that can rapidly concentrate and disperse, and take over the present functions of armor and infantry. Although it will be prepared to employ short-range, fractional atomic weapons, it also will be able to deliver accurate conventional firepower as required.

Initially, these striking forces will be transported in "bush" type aircraft and helicopters. The basic requirement for these aircraft will be their ability to provide reliable transport for small groups of men and their fighting equipment.

### **The pattern of war to come**

To better understand how the firepower of the Universal Division is employed, let us look at a typical situation. After deciding to deploy in a particular area of operations, the division commander will have his SAM's leapfrogged by air into ground positions for which they can provide an "umbrella" defense. They will be the first divisional units to be established in fixed ground locations, and their deployment will be covered by the Screening Forces. Then the SSM's and the Striking Forces will be delivered by air.

A target deep in enemy territory is picked up by a mobile observation post—a manned aircraft or drone. Simultaneously, the target data are re-

corded at the Tactical Operations Center and a decision is made to fire in support of the commander's current operations plan.

The fire support coordinator consults his electronic map and notes that there are three "ready" areas from which the target may be engaged. He also notes that there is a missile carrier cruising in each area. The third section of Battery C is selected and radioed to go immediately into position on an approximate azimuth of 237 degrees.

The section leader turns around and at 30 miles per hour heads for a clearing he had just passed a quarter of a mile down the road. As he brakes to a stop, he throws a switch to stabilize the carrier and signals that he is in position.

Immediately the servos take over and begin to lay the missile. They are controlled remotely from the Tactical Operations Center where a master computer has figured all the necessary firing data.

As a green light flashes on, signifying ready, the section leader warns his crew, and fires. Great accuracy at ranges far beyond conventional artillery is possible. Within minutes the third section is again "orbiting" on a 20-mile preassigned route.

Such could be the pattern of things to come, if the United States chooses to expend the necessary resources! The development capability and production facilities are available. The American fighter, as an individual, can only be decisive if he is given the best leadership and equipment we, as a nation, are capable of producing. In the light of present world realities, the old adage that "one American can lick any ten opponents" is wishful dreaming. If we are to achieve the limited war capability which is so essential to our national survival, we must capitalize on the strength of our American way of life. Our strategic thinking is lagging behind our technology.

No development of a single weapon promises to make possible an abrupt shift in the existing distribution of tactical military power. However, an integrated tactical weapons program of the magnitude and diversity discussed in this article, in conjunction with presently programmed strategic bombardment forces, could alter decisively the present world political and military balance.

All of these developments are, of course, costly. They will require a great deal of national effort. But without this effort, our field forces will fail to achieve their full potential. Even more alarming will be our inability to successfully meet the Communist challenge. But in the end, material means will avail little to preserve our way of life if we, as a nation, do not have the determination to fight for our national objectives with everything we possess. As the founders of our country so clearly stated, we must be willing to sacrifice not only our fortunes, but, indeed, our very lives if need be.



Support Weapons Wing demonstrates firing of 3-inch mortar

## THE BRITISH SCHOOL OF INFANTRY

*As you would expect, a mix of the old and the new* Lt. Col. LAWSON W. MAGRUDER, Jr.

As a U. S. soldier, you must have often wondered how the service schools of other armies are organized and run. Having recently completed a tour at The School of Infantry, United Kingdom, I thought it would be fitting to describe how that school's functioning compares with that of our own at Fort Benning. While what I shall say has the infantry slant, it should interest members of the other arms and services.

First off, I should say that the conduct of this particular school in general parallels that of others in the British and Commonwealth armies. The School of Infantry consists of a Headquarters and seven wings (wings are roughly equivalent to Benning's departments), located in these towns and counties: Headquarters, and Administrative Wing, Warminster, Wilts; Small Arms Wing, Hythe, Kent; Support Weapons Wing, Nether-

The barracks at Warminster—headquarters of the British Infantry School



von, Wilts; Tactical Wing, Warminster; Signal Wing, Hythe; User Research Wing, Netheravon; Clerks Wing, Warminster. These wings are under command of Headquarters, The School of Infantry, which, under the general direction of the War Office, controls the policy of directing their work.

### **The School's responsibilities**

The School's charter lists these responsibilities of the Commandant, as laid down by the War Office: General policy, including administration; to ensure that the tactical doctrine formulated at the School and approved by the War Office is taught at all wings; research and trials through the medium of the Infantry Board; production of training pamphlets and training films; coordination and liaison with other training agencies at home and abroad including the Infantry Junior Leader's Battalion (the equivalent of our National Defense Cadet Corps); liaison with the schools of other arms through their GSO 2, Infantry (Infantry majors who are liaison officers at the schools of other combat arms); organization and administration of Biennial Infantry Commanders Conference and the Annual Demonstration (the latter compares roughly with our Joint Civilian Orientation Conference); organization of

CO and seconds-in-command course following each Infantry Commanders Conference (a refresher for battalion commanders and their executive officers).

One of the most important tasks of the School of Infantry is to continue the military education of Infantry subalterns (the British term for second and first lieutenants). Within six months after graduation from the Royal Military Academy these officers attend a Platoon Weapons Course at the Tactical Wing.

### **Departments not centrally located**

If you examine The School of Infantry's command structure you will note that the various wings are not centrally located under Headquarters at Warminster. This calls for clarification before we go into some details of the functions of Headquarters and the different wings.

Actually, The School of Infantry is a post-World War II establishment, with the barracks at Warminster as site for Headquarters and Tactical Wing. These barracks, of 1938-39 vintage, were used initially by armored regiments and subsequently by U. S. troops until the end of World War II. The other two locations, Netheravon and Hythe, long have served the British Infantry.

Blenheim Hall prepared for a discussion of battalion organization. The shields on the wall are badges of infantry regiments.







The Officers' Mess dining room

Netheravon is widely known for its school for machine guns and mortars during both World Wars. Hythe, home of the School of Musketry, has served the British Infantry since the middle of the nineteenth century.

After World War II, in their initial efforts to establish without delay a modern infantry school, the British incorporated the installations at Netheravon and Hythe under Headquarters at Warminster. The consolidation of all wings in a central plant is constantly being studied by the War Office. The major obstacle is lack of an area large enough to accommodate training requirements. As you can imagine, real estate—particularly for military ranges—is at a premium on this crowded island.

The Commandant, a brigadier, commands his wings from Headquarters at Warminster. He and his staff of about seven officers carry out the policies determined by the War Office. In this connection, the Director of Infantry at the War Office and the Commandant are in constant communication, which facilitates the understanding and execution of these policies. It is at this echelon that liaison is effected between our Infantry and the British. It has been the custom for the Director of Infantry and the Commandant to attend all Tripartite Infantry Conferences (U. S.-

British-Canadian) and other related gatherings such as our World-Wide Infantry Conferences held at Fort Benning. You may be sure there is a free flow and exchange of ideas between the two armies.

Possibly a general understanding of the operation of the remaining wings can be gained if first we cover briefly the NCO Division of the Small Arms Wing at Hythe, and then examine in some detail the Company Commanders and Platoon Commanders Divisions of the Tactical Wing. Actually, all wings are run quite similarly.

#### The NCO Division

The NCO Division is headed by a major whose title is Chief Instructor. He is assisted by two captains who are called Syndicate Leaders. Each syndicate includes 60 noncommissioned students who are further divided into instruction squads. Noncommissioned officers are trained as weapons instructors and organizers-supervisors for weapons training to the other arms. Each year there are three courses of eight weeks, and two of four weeks, which result in an output of some 300 graduates.

Weapons training of instructional squads (average strength, eight students) is by members of the Small Arms School Corps. The SASC is an

interesting outfit. It is made up of warrant officers and noncommissioned officers who are outstanding in handling weapons and in teaching ability. They have transferred voluntarily from their original regiments. In other words, the SASC is a separate corps and is a unit for which these outstanding soldiers enlist for their entire careers. Because of the stability in these assignments and resulting continuity of instruction, results are conspicuous. Their services are utilized throughout the whole Army, and they instruct both officers and enlisted ranks.

A word of explanation regarding "noncommissioned officers" and "warrant officers." In the British Army only corporals and buck sergeants are called noncommissioned officers. All higher noncommissioned ratings are called warrant officers. There is no grade comparable to our warrant officers.

It is challenging and most gratifying for an American instructor to appear before this NCO Division at Hythe. Noncommissioned and warrant officer students are mature, seasoned soldiers. Because of their experience you can be assured of being asked thoughtful, and sometimes pointed, questions during a discussion of infantry tactics. The British noncommissioned officer takes great pride in his Infantry and exhibits it in his strict military manner.

Before leaving the NCO Division, it is important to understand that enlisted men too upon entering the Infantry are assigned to regiments in roughly the same way as are newly commissioned lieutenants. Where practicable, they remain with the regiment to which originally assigned.

### Life in the Tactical Wing

Now we can look at the Tactical Wing, housed in the barracks two miles west of Warminster, a marketing town of some 8,000 on Salisbury Plain.

Upon arriving at the Tactical Wing students are billeted in one of the two officer messes. Only senior students of the Company Commanders Division are assigned rooms in the Old Mess, the others of both Divisions being housed in the New Mess. The Old Mess, constructed with the original buildings, is the focal point for activities for permanent personnel of both Headquarters and the Tactical Wing. The New Mess was completed in 1956, solely for students. Here you will see the familiar FOLLOW ME plaque, presented to the School by a past Commandant of Benning during a visit there.

Because the courses for both Divisions are short (eight weeks), few married officers bring their families. In fact, it is unusual for the young and recent graduate of Sandhurst to be married. The mess is the officer-student's home during his at-

tendance at the Tactical Wing. The officer is furnished a batman (personal orderly). It is rare for a student to bring his batman from his regiment. Normally, such services as uniform pressing, care of brass, footgear and leather, are performed by the batman platoon of the Headquarters Company, or by civilians. Regardless of who does the work, the officer must pay for the service.

All meals are served in the dining rooms of the messes. Breakfast, with two or three of the London morning papers, is a most important meal to all British officers, and the student at Warminster is no exception. You will see as many as 12 morning papers as you walk into the dining room for breakfast.

As with us, the practice in the mess is to charge everything by signing a chit (from the Hindustani *chitthi*, a letter), with no cash changing hands. After dinner the bar is unattended, so the officer serves himself and signs his chit.

Recreation is provided by sports facilities such as a cricket field, football pitch (soccer field), tennis courts, and a swimming pool. For a nominal fee the student can golf on the course adjoining the Barracks grounds. Additional interests are served through the School's stable and by the Beagle Pack which meets twice a week during the fall months. The School takes its beagling most seriously, and its pack is well known. Some of its horses have done well in local trials. During summer months there is fly-fishing for trout and grayling on the Wylde River.

### The academic side

On the academic side, both courses are strictly tactical in nature. Each course is restricted to the rank it represents, and stresses field exercises. The Platoon Commanders course is most detailed because of the state of training of the young students. It is most unusual for any officer taking this course to have had troop experience.

With few exceptions, all instruction is through syndicates of ten members each, supervised by a member of the permanent teaching staff. The Platoon Commanders Division has six syndicates, each led by a captain. There are four syndicates in the Company Commanders Division, each headed by a major.

No examinations are graded. The practice is not to rank each student academically, but after he completes the course his syndicate leader renders a descriptive report. This goes to the War Office, and usually to the student's regiment.

Because of the great stress upon the syndicate system, qualified instructors to serve on the permanent staff are carefully selected. These officers, distinguished tactical instructors, usually serve as syndicate leaders for a two-year tour. The syndicate leader gets to know very intimately



The School's beagles are outstanding and beagling is taken most seriously

each of his students after spending eight weeks with them. He needs to, if he is to render a report that can do much toward assisting in developing the student's career.

#### Formulating basic doctrine

Another important duty of the instructor in the Tactical Wing is the formulation of basic tactical doctrine. An instructor is responsible for a group of subjects covered in the program of instruction. In turn, these instructors are grouped into subcommittees, so that each subcommittee is responsible for a variety of subjects.

Any subject requiring clarification is referred to the relevant subcommittee, and its president prepares the considered opinion of the group. While the subject is being discussed, points of difference are referred for ruling to either the Chief Instructor or to the officer heading the Company Commanders Division. The resultant finding is then forwarded to the Commandant of the Tactical Wing, and the final solution is submitted to the School's Headquarters.

Actually, this is very similar to our method of formulating doctrine in our combat-arms schools. However, two officers stand out vividly in the British system of formulating over-all infantry

doctrine: the Commandant of the School of Infantry and the Director of Infantry at the War Office. As we have seen, these officers work closely with our Army and the Canadians in tripartite discussions of doctrine.

To allow the Commandants of both the School of Infantry and the Tactical Wing to meet and better know the students, a Guest Night is observed several times during the course. This is held at the Old Mess, and because of its limited size the number of student guests must be restricted. This is the reason for conducting a Guest Night at least twice during each course. The student attends with his syndicate, accompanied by his syndicate leader. This Guest Night is a formal dinner at which the officer wears his dress uniform. The affair is strictly stag, and although it begins rather early in the evening it may last until the early hours of next morning. For this occasion the Mess Secretary sets a beautiful banquet. The only exception to the stag rule occurs on New Year's Eve, when Guest Night is held for officers and their ladies. The Warminster warrant officers' mess has comparable activities.

This look at the School of Infantry indicates that the British approach to the education of the young officer is about the same as ours.





**An H-34 Choctaw of the 2d Armored Cavalry Regiment follows the winding Saale River near Hof, which forms the boundary between West (left) and East Germany. An 11-man air-landing team equipped and trained to handle border infiltrators is in the cabin of the Choctaw. The Autobahn bridge, dynamited by Germans in World War II, has never been repaired.**

**An 11-man air-landing team, divided into two squads and led by a lieutenant, simulates an operational landing from a H-34.**



## NATO's Flying Border Watchers

The U. S. Army helicopter flew at treetop level just inside the border separating West Germany from Czechoslovakia. On board the Sikorsky H-34 Choctaw a soldier on his first Iron Curtain patrol peered through the cabin window toward Communist territory and said, "I don't see anyone over there."

His squad leader handed him a pair of binoculars and pointed to a guard tower on the other side of the line. The soldier focused the glasses on the tower catwalk, his jaw dropped, and he gasped: "Go-l-l-y!" He found himself looking down the rifle barrel of a Czech guard who followed the helicopter in his sights until it disappeared.

"That fellow does that to us every time we come by," the sergeant said. "He's just testing our nerves."

This testing of nerves goes on 24 hours a day along West Germany's border with Czechoslovakia and East Germany, which lies athwart the main approach routes from the East. Armed men on both sides of the line warily eye one another's every move.

Serving as eyes and ears for NATO along this critical 250-mile stretch is the 2d Armored Cavalry Regiment, a part of the U. S. Seventh Army. It keeps the border zone under constant surveillance, poised to cope with an infiltration or to act as a delaying force in the event of a full-scale attack that would turn the cold war hot.

To accomplish its mission, the 2d Cavalry must be flexible and mobile, and helicopters give this to them.

Colonel Lawrence E. Schlanser, Commanding Officer of the 2d Cavalry, himself spends about 15 hours a week in aircraft, mostly helicopters. They enable him to frequently inspect the far-flung areas of his command and stay abreast of daily developments on the frontier.

"We are now set up so that our air-landing teams, which are fast-striking units on around-the-clock alert, can be lifted to a danger spot anywhere on the border in a matter of minutes," Colonel Schlanser said.

These teams of Minute Men are the pride of the 2d Cavalry.

A visit to one of the air-landing team stations located only a short hop from the border provides a typical example of this operation.

A team consists of 13 men. There are two five-man squads, a lieutenant who serves as section leader, and two helicopter pilots. Teams are on standby duty 24 hours a day, the officers in their ready room and the enlisted men in their quarters. Their H-34 helicopters, carrying a full load of fuel and warmed up at regular intervals, stand outside, summer and winter, poised for immediate takeoff.

The "hot line" rang one day shortly after noon. Lieutenant Bert Bertils picked up the receiver.

"Birdwing mission!" announced the voice on the other end of the wire.

Lieutenant Bertils turned from the mouthpiece and barked: "Birdwing!"

Chief Warrant Officer Lloyd Hulsey, one of the pilots, streaked out the door for the helicopter. Lieutenant Dud Carver of Biloxi, Mississippi, the co-pilot, remained behind a moment to plot the general border area where the "incident" was taking place. Once he got that information he, too, ran for the H-34.

In the enlisted men's ready room, meanwhile, the call had been monitored by the charge of quarters. All he needed to hear was one word, and he hung up the phone and bellowed: "Birdwing!"

One of the squads was at lunch. The men of the other squad dropped their magazines and cards, picked up their helmets, weapons and ammunition, and ran for the helicopter. A quarter of a mile away the mess sergeant got the message from the charge of quarters. He poked his head into the messhall, yelled "Birdwing!" and five more men took to their heels.

(Continued on page 73)

Army helicopter pilots who fly for the 2d Armored Cavalry Regiment are completely familiar with the border area. They are Lt. Dudley J. Carver, Jr., and CWO Lloyd W. Hulsey.



# ARMY

## cerebrations

### A NEEDED REFORM. *The Arthur King System of Army Correspondence (AKSAC) bears the mark of genius*

ARTHUR KING

Every so often writers burst forth with the apparent intent of reforming the Army's administrative system. All have good ideas, but all support an erroneous basic argument. And they all miss their mark!

First, let's investigate the matter of fallacious basic argument. The thing that's wrong with all these articles on reforms in administration is that they depict company commanders as overworked slaves because of needless directives from higher headquarters. A bit of reasoning can shoot holes in this picture.

First off, consider how many company commanders send correspondence to higher headquarters—and vice versa. Secondly, why not recall from the dim past of the old brown-shoe Army an official statement of policy on the matter? Remember Operation Paperchase? Who cares how effective it was? We were interested only in its purpose. Didn't the Army say, "Go forth and eliminate any unnecessary reports created by your own headquarters or by subordinate ones?" Verily, it did.

Now that we all have the general idea, let's set about reforming Army administration from this new aspect. Now the object is to stop any possible flood of paperwork from company commanders to the next higher headquarters, from that headquarters to the next higher, and so on up to the Pentagon.

I believe I have hit upon just such a system.

The Arthur King System of Army Correspondence (AKSAC) can eliminate all needless correspondence. (It has a bonus advantage of having a very Madison Avenue sort of name, but we don't really want to brag about that—yet.) The heart of AKSAC is a booklet of blank forms or a booklet of punch cards. (AKSAC can be automated. What more does the Army want?) To see how AKSAC works, let's follow a letter from a sending (lower echelon) headquarters to a receiving (higher echelon) one.

Under AKSAC, the sender posts his letter just as he would under current administrative methods. After being returned twice because of improper franking, and after being kicked around for two months in the postal system, this letter reaches the addressee headquarters. The receiving message center stamps it in, then fills out all the forms in one AKSAC booklet; simply by typing the sender's address in the TO block, the receiver's address in the FROM block, date of receipt in the DATE block, and entering the date and subject of the sender's correspondence in a space on

the first form. Built-in carbon sheets print this information on all forms in the booklet.

Now sit back and watch AKSAC really take over.

One of the many rules or prerequisites of good leadership is to let subordinates know you are aware of them and their problems. AKSAC Form 1 does just that. Technically, it is a receipt for correspondence. It says: "Your correspondence dated \_\_\_\_\_, subject \_\_\_\_\_, has been received at this headquarters and has been referred to appropriate personnel for study."

Now what could be a better receipt? Certainly it states that the receiver has received. Surely the sender cannot argue about who is to study his correspondence. This, like so many other disgusting things, is a command prerogative. Under AKSAC it is delegated to the message center clerk at each headquarters.

An efficient higher headquarters is always checking and rechecking lower commands, keeping them on their toes and awake, so to speak. AKSAC Form 2 takes care of this. It goes out automatically 30 days after the dispatch of Form 1. Form 2 reads: "Your correspondence dated \_\_\_\_\_, subject \_\_\_\_\_, was received here on date indicated in block No. 3. Request your headquarters furnish this office with current status of your correspondence." If Form 2 does not keep a lower headquarters awake nights, nothing will. It also provides an opening for a possible flood of follow-up correspondence, command inspections, corrective actions, and the like.

AKSAC Form 3 begins to reveal the true drift of this system of administration. It follows Form 2 by 20 to 30 days, according to each commander's desires. When the sender gets Form 3 he reads: "Your correspondence dated \_\_\_\_\_, subject \_\_\_\_\_, is under study by this headquarters. Request your correspondence be reviewed to conform with current budgetary limitations and possible program curtailments."

Of course, the receiver could just let things drop with Form 3, but that would be improper management. The receiver has yet to give a positive answer. This reply comes in Form 4, which follows Form 3 by 15 days, allowing insufficient time for requested review. Review is no longer necessary, however. Form 4 says: "A negative reply is hereby submitted concerning your correspondence dated \_\_\_\_\_, subject \_\_\_\_\_. No further correspondence concerning matters set forth in basic letter is contemplated." Now you see why review is no longer required.

Form 4 should end any action on the part of the



sender, but to be sure that dead dogs stay dead, AKSAC has a Form 5. In bold-face type it announces: "Your correspondence dated \_\_\_\_\_, subject \_\_\_\_\_, has been classified TOP SECRET. Discussion of matters set forth in such correspondence is on a need-to-know basis with authorized personnel only. Correspondence with your headquarters concerning these matters is NOT (repeat NOT) authorized. Your headquarters will take positive action to destroy all file copies of referenced correspondence." No subordinate in his right mind would dare argue with Form 5.

There you have it. The Arthur King System of Army Correspondence is all I have said it would be, and more too. It fits right in with any RIF program in the near future. With AKSAC, a headquarters can

be run by no more than two or three message center clerks and a few second lieutenants around to answer phones. Also, nothing I know of goes farther to officially express the status quoism of bureaucracy, so AKSAC might eventually find universal application throughout all agencies of the Government.

Oh yes, before I forget, AKSAC could be applied to supply procedures too. For example, requisitions more than two days old upon receipt by a depot might be returned with this note: "Your requisition No. 999 is returned herewith and canceled because of proper format."

I recommend that AKSAC be turned over to CONARC for feasibility study. If this is done, AKSAC will surely disappear, never to be heard of again.

## THE CAPTAIN MUST GET THROUGH. *With the arrival of nuclear weapons in the company, the battle group commander needs direct communication with his captains*

COL. THEODORE C. MATAXIS

In "They're Not Getting Through" [ARMY, July] Lt. Col. Mont S. Johnston highlights one of the major deficiencies in the Pentomic structure. Having been a battalion commander in World War II and regimental executive and commander in Korea, I heartily concur with his basic premise concerning the lack of "eyeball contact and understanding" between company and battle group commanders.

As CO of an airborne battle group in Europe, I find that one of my major difficulties is the "rapport" which is needed between myself and my company commanders. There is no difficulty in getting orders expedited. The presence on the staff of two lieutenant colonels and five majors, plus other assistants, always implements speedily even my most casual "Wouldn't it be nice if." Unfortunately, however, as Colonel Johnston points out, there must be communication upwards as well as downwards.

It takes a strong-willed and even rash captain to brave the glares of the combined staff if he "dares" to question a directive of the battle group commander. And if said company commander is a lieutenant, this feeling becomes even more evident.

Unfortunately, today's battle group organization places the lieutenant colonels and senior majors in positions where their main task as staff officers is to carry out the guidance given by the BG commander. Under the triangular set-up, commanders, being senior field-grade officers, could more readily question orders they felt unwise or untimely. This is not to say they couldn't also do this as deputy commander or executive of a battle group, but it is well accepted that one's position as a staff member or commander tends to color his outlook. It depends on which side of the desk you sit. As a staff officer you cannot understand why subordinate commanders don't stir their stumps to carry out orders. As a commander you are prone to wonder what the staff officer was smoking when he recommended such an unrealistic plan.

Taking a closer look at today's Pentomic structure,

it is open to question if perhaps we haven't committed an error in organizational nomenclature. The recent increase in division artillery from two to six battalions recognizes that its original Pentomic organization was not the most effective solution. The recent changes in the infantry structure also indicate that its original organization also was not the best. I wonder if perhaps the changes we have made in the infantry battle groups have not been "creeping adjustment" in the right direction rather than the bold-range changes needed.

With the passing of the battalion, the infantry's major indirect fire weapon (the 81mm mortar) and the antitank 106mm recoilless rifle moved down to the company, and the machine gun and rocket launcher in turn moved into the rifle platoon. I wonder if we aren't wrong in retaining the name "company" for such a hybrid unit that is half company and half battalion. Perhaps if we had renamed it, and changed its strength somewhat, as we did the regiment, we would have a more realistic organizational structure.

With a new name perhaps the perennial block against having "field-grade company commanders" would be overcome and we would be able to clearly realize that the commander of riflemen, machine gunners, 81mm mortar men, and antitank gunners is something more than an operator, as were his World War II and Korea predecessors. In fact, with his unit dispersed on the atomic battlefield he has responsibilities closer to those of the World War II battalion commander than those of a company commander. In my group I treat company commanders more as "demi-battalion" commanders than as company commanders, leaving the routine details in their hands so far as possible and concentrating on giving them missions which they must accomplish.

Perhaps if sub-unit commanders were of field grade (intermediate supervisors) the battle group commander would once more be able properly to divide his energies and fields of interest between division and his subordinate units. Such a change would not only result in a basis for a more suitable organization but

also would provide a more realistic grade structure and relationship within the battle group.

I can hear the Old Guard groaning in anguish about inflating the rank structure. Still others will sagely comment that tactically it will never work.

During four years at The Infantry School I heard the same cries of anguish when the old stylized position defense, popular since World War I, was broken up in favor of a looser formation and mobile defense better suited to the atomic battlefield. Also the moans and groans of the Old Guard that the battle group is only a reinforced battalion anyhow, and why should a colonel command it.

With Davy Crockett, the fractional yield atomic weapon, soon to be in the hands of troops, now is the time for bold-range changes among the infantry units of the Pentomic division. With fractional yield atomic weapons in battle groups, and perhaps in the future even down in "companies," tactical and organizational concepts must change once again. Such changes are not new. When gunpowder was first introduced, muskets were integrated into pike-armed formations in the ratio of one musket to ten pikes. Over the years the ratio of musket firepower to pikemen kept chang-

ing until the pikes were replaced by the musket with bayonet. During this time there were constant alterations in formations and tactics as each commander tried to fashion his unit to get the most out of his weapons.

We are in the midst of a similar transition now, in the relationship between atomic and "conventional" firepower. When the 280mm cannon was first integrated as a corps weapon it caused the breakup of the old MLR type of static defense and the regimental organizations. Since then we have been gradually changing to accommodate new weapons such as 8-inch artillery pieces, Little John rockets, and Sergeant missiles. During this time the current Pentomic concept was developed.

Now is the time to start rationally analyzing what we should develop to best utilize the Davy Crockett. I realize that whatever is developed in the fields of tactics and organizations must be war-gamed and field-tested before being adopted. However, what we develop should reflect the experience we have already gained in our current organization and should provide for a direct command line from colonel to company commander.

## TIME TO CHANGE CARS. *Eliminate the battle group and resurrect the tremendous influence of regimental tradition*

CAPT. H. J. MEYER

The infantry regiment is no longer the soul of the U. S. Army. Unfortunately for the infantry and the Army, the Combat Arms Regimental System (CARS) in three years has succeeded in what millions of enemy soldiers failed to do in 185. CARS has destroyed all our infantry regiments.

The infantry regiment was interred without military honors with the publication in 1957 of DA Pamphlet 220-1.

As a "living" successor to the once proud infantry regiment, CARS offered as pretender a military orphan we call the battle group. Anyone who has lived and fought with an infantry regiment knows its marks were originality, common purpose, unity of effort, and comradeship. Conversely, those who have served in a battle group call it an organizational stepchild. Some infantrymen may take exception, and speak of "esprit and morale" in battle groups to which they once belonged or are now assigned. These disagreements can't be shook off, but the spirit and morale of the regiment can never exist in the battle group.

Pride in the regiment has even caused some soldiers to circumvent CARS in an effort to reclaim the essence of the regiment. Some units, for example, simply ignore the designation "battle group." Recently one infantry division commander refused to allow the term in his operations plans or orders. Active battle groups have attempted in other ways to reacquire the heritage of the regiment. It is easy to understand why. Battle groups would like to be regiments, but lacking lineage, they debase the legitimacy of the regiment.

The heart of the regiment was its singleness, which in some cases stemmed from decades of military tradition. Regimental stature has been attained by newly activated units with no history other than the Army tradition of the regiment. Now, through CARS, we join faceless infantry units each of which goes its separate way, avoiding regimental tradition and heritage. At the same time old and respected regiments grope around in a military vacuum: the Blue Spaders (26th), the Old Faithfuls (415th), the Wolfhounds (27th).

Formerly, the personality of each regiment stood apart. Take the Old Guard. A soldier of the 3d Infantry with his distinctive black and buff leather strap realized he wore something that was unique with his regiment. When he met another soldier wearing that strap he recognized him as a regimental comrade, shouldering a similar prestige and purpose. CARS has eliminated this spirit. The battle groups of CARS, which should demonstrate regimental solidarity, cannot share common traditions stemming from past achievement. It is quite easy to understand why members of the 1st Battle Group, 3d Infantry Regiment, stationed around Washington, D. C., cannot share the same traditions as the regiment's 2d Battle Group, which is in Korea.

Under CARS the regiment is nothing but a conglomeration of battle groups, each of which lacks the distinction and substance once known in the infantry regiment.

The 187th is one of the airborne's most distinguished infantry regiments. Its 2d Battle Group is with the 101st Airborne Division in Kentucky; its 1st is with the 82d Airborne Division in North Carolina. The prac-

tice of permitting the battle group labeled "1st" to retain the regimental colors and trophies is deleterious to the esprit of every other battle group in the same CARS regiment. For example, when the 187th's 2d Battle Group parades with the others of the 101st Airborne Division, the 187th Infantry's troopers know that of all the colors passing in review, theirs is only a copy of the regiment's original. The day is coming when every battle group will carry imitation colors, for under CARS all genuine colors, trophies, battle prizes and citations are to be stored in some place yet undesignated.

General Ridgway once observed, "Why, the intangible is the most tangible thing we deal with in our service!" Intangibles made the old regiments. However, the originators of CARS preferred the coldness of a personnel system to the warm respect which formerly existed among soldiers and officers in the regiment.

The regimental intangible is exemplified in the words of Lt. Col. Ray C. Allen, 327th Infantry, who during the Battle of the Bulge said: "This is our last withdrawal. Live or die, this is it!" Some staff people have dismissed his message of determination and combat leadership. Infantrymen know that these words of leadership could have lived forever in the 327th Infantry Regiment. But not now, for regiments are no more.

We were told that one of the purposes of CARS was "to bring the Army closer to the public." It is regrettable that a simple public information task was preferred to the sincerity of regimental dedication known, for example, by the soldiers of the 39th Infantry when they were led by the indomitable Col. Harry A. (Paddy) Flint, killed at St. Lô. His fighting regiment has fallen too, to CARS, but if it could be resur-

rected so would the tremendous tradition of Paddy Flint. His spirit would provide new traces of tradition to a great regiment. Colonel Flint's regimental battle song, "AAA: Anything, Anywhere, Anytime, Bar None," would again be heard as only a well-led combat outfit can sing it.

We were also told that CARS would serve to "vitalize" Army National Guard and Army Reserve outfits. What infantry regiments of these components needed revitalizing? Certainly not, for example, the 135th Infantry of Minnesota, the 148th of Ohio, or the Dandy 5th of Maryland! These are only a few of the splendid citizen-soldier outfits that have done so much for our nation.

If we are to rekindle the spirit and flame of the regiment into infantry units the CARS philosophy must go. To return existing battle groups to their traditional regimental status the initial efforts should begin with those currently designated "1st." For example, the 1st Battle Group, 19th Infantry, would again become the proud 19th Infantry Regiment. A search among disbanded units would provide numerical designations for the 19th's other battle groups. If we run out of numbers among disbanded regiments, we can designate new ones. An infantry regiment so reactivated can begin in its own tradition and originality. More important, it will stand apart from all others, as a regiment can and should.

Of course the development of nuclear tactics dictated the organization of combat units to meet the challenges of the future battlefield. But nothing has come from the slide rules and drawing boards to require the break-up of the infantry regiment. Its spirit and traditions are still essential, perhaps now more so than in the past. Let's bring back the regiment to the infantry. We can do it by abandoning CARS.

## ADVANCED TRAINING FOR THE SENIOR NCO. *We need variety in courses for candidates and senior noncommissioned officers*

LT. COL. PRENTICE G. MORGAN

Army Regulations 350-90 states that the mission of noncommissioned officer academies is to "broaden the professional knowledge of the noncommissioned officer and instill in him the self confidence and sense of responsibility required to make him a capable leader of men." There can be no quarrel with that.

The AR further states that "consideration should be given to conducting separate courses for senior noncommissioned officers and for noncommissioned officer candidates. The content of the two courses need not vary appreciably." I disagree with the last sentence.

Noncommissioned officer candidates are being instructed in subjects in which they have virtually no practical or theoretical experience, and their schooling must deal with basic principles in considerable detail. Obviously they require more hours of instruction than do veteran noncommissioned officers in basic military subjects such as leadership, instructor training, small-unit tactics, basic infantry weapons and

close order drill. The principle of fitting the scope of instruction to the needs and abilities of the student has a firm place in pedagogy and needs no defense.

Consequently it would appear that courses for candidates and senior noncommissioned officers should vary appreciably. It is true that, despite their broader experience, many senior noncommissioned officers have developed a certain narrowness of viewpoint because of career specialization. To correct this what we need is not repetition of basic noncommissioned officer training but remedial refresher training.

This may be accomplished in a much shorter time than that needed to educate a candidate, and the saving may be profitably utilized for advanced schooling for the mature soldier who has already devoted a considerable portion of his life to learning highly important details of his profession.

But does the mature noncommissioned officer need such advanced schooling? Most probably yes. Certainly on the future battlefield he will face situations much more complex and calling for the exercise of a much greater degree of responsibility than at any



time in the past. Also, since he is likely to have a better general education than noncommissioned officers of the past, he can better use theoretical knowledge which will fit him to accept and handle new developments when they arrive. If we are going to spend the time and money necessary to send him to school at all it is better that we prepare him for the future rather than have him spend his time being drilled in details he already knows pretty well anyway.

The regulation specifies 196½ hours of instruction for all academy students, whether senior or candidate. This must be considered a minimum, however. For instance, at the noncommissioned officer academy at Fort Dix, the curriculum includes 264 hours of instruction. Assuming that necessary refresher training could be accomplished in the 196½ hours specified in the AR, 67½ hours could be devoted to the "higher education" of the experienced noncommissioned officer. By judicious paring and integrating and combining of subject matter it is probable that even the 196½ hours "minimum" might be reduced and that as many as 75 hours might be devoted to advanced study.

Assuming that we have gained a considerable saving in instruction time, we must determine what subjects to add that would appeal to the senior noncommissioned officer's greater maturity and to enhance his value to the service. I suggest these additions:

*Developmental trends in the Army of the future.* This would acquaint the student with the organization, weapons and tactics in the future field army, in both nuclear and nuclear-free war. It would also familiarize him with the organization and functioning of the combat research and development system.

*Tactics of the combined arms and joint operations.* This would teach him the principles of employing the tank-infantry-artillery team, operations involving naval and air forces, the necessity for integrating all reconnaissance means, and the need for coordination among diverse elements at the various levels at which they may have to fight in concert.

*Special weapons.* This course would familiarize the student with the organization, tactical use, and effects of nuclear weapons. He would also be taught to make basic computations of the factors involved in their employment. In addition he would undergo basic instruction in rockets, missiles, battlefield surveillance methods and equipment, and electronic warfare.

*Staff procedure in combat.* While the senior non-

commissioned officer is likely to be adept at staff procedure in peacetime, this course would fit him to take his place in the wartime staff structure. It should include instruction in staff records and reports, situation maps, SOPs and CP organization in the field. (In FAREX 60 it was noted that many otherwise highly competent noncommissioned officers were deficient in basic knowledge of these subjects.)

*Principles of communication.* This would provide an orientation in modern methods, devices and techniques of one of the most basic of all military subjects, one with which every leader must deal constantly throughout his career. Yet future progress in this field is likely to be so rapid that almost anyone will be hard pressed to keep up without the benefit of a head start.

*Principles of war, military history and traditions.* These subjects supply the student with a background commensurate with his importance to the Army. Before you say that the principles of war are too broad and advanced a subject for the noncommissioned officer, ask yourself whether surprise, economy of force and mobility are less important for the platoon than for the field army. This course should stress the importance of the noncommissioned officer and his development and changing roles throughout history, emphasizing his highly important place in the complex armies of today and tomorrow. It should add to the pride of station he should feel and assist materially in promoting adherence to the traditions of valor, steadfastness and esprit de corps as a living force in the U. S. Army.

Not all of these subjects would have the same weight and importance, but none would be "soft." They would deal with the practical point of view. They should make the noncommissioned officer more efficient and effective in dealing with seniors, subordinates and, not least, with the public. Because of refresher training he would receive in elementary subjects his role as a junior leader and instructor would not be lowered, but he would be graduated from the strictly hup-two-three-four school of thought.

We have read much about the need for enhancing the prestige and professional competence of senior noncommissioned officers. The best way to do this is through increasing his knowledge of what is going on in the military world. These are mature soldiers, already men of great value. They should have an opportunity to broaden and extend their horizons.

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## RURITANIANS

(Continued from page 34) equipped. He issues periodic releases to the press verifying the operational readiness of this set of equipment, so the nation thereby is assured of its military preparedness.

During the week preceding its annual IG inspection, each company is issued a complete and letter-perfect set of printed duty rosters. The first sergeant need only type in an alphabetical list of

company personnel in the left-hand column in order to be awarded an automatic Superior in Administration.

In the Ruritanian Army the company commander has been replaced by the company certifying officer. This new type of leader completes all necessary certificates each day, then fills out the Daily Certificate Certificate to show that he has done so. Next above him is the battalion endorsing officer, who at the end of each day fills out the Battalion Daily Certificate Certificate Cer-

tificate, to attest that he has received the Daily Certificate Certificate from each company. The BEO's report goes forward for inclusion in the Regimental Daily Certificate Certificate Certificate Certificate. Because the name of the document rendered by a Ruritanian corps commander at the end of his duty-day is incredibly complicated, it will not be explained here.

### Tactical doctrine

Tactical doctrine is based upon the theory of rated firepower. Thus, although in 1954 the Boldovian Expeditionary Force had a two-to-one firepower advantage over the Ruritanians, the UN arbitration team decided that notable border dispute in favor of the Ruritanian II Corps because it had twice as many weapons due out on validated requisitions as the Boldovians had in their entire national stockpile. Faced with this irrefutable logic, the Boldovians could only pick up their weapons and go home.

Thinking soldiers the world over are pointing to Ruritania as the model of things to come. It seems amazing that this quaint little nation, 20 years ago unknown except as the setting for a few comic operas, could so rapidly advance to the fore of the world's military powers. But the Ruritanians, by applying ruthless logic to the modernization of their military establishment, have outstripped all competition through sheer organizational efficiency. Perhaps somewhere in their story lies a lesson for all of us.

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## LINE AND STAFF

*(Continued from page 47)*

Such a person should start at the first level, the worker. He should look forward to staying there all his working life. In other words, he must become an "organization man" in the strictest sense of the term. He should not aspire to his supervisor's job, not only because that would be untactful but also because he is not yet qualified for that post. His first promotion should be to the staff of the third-level manager.

Once on this staff, this person has two opportunities: to broaden his knowledge to include the activities of all the supervisors under his manager, and to sharpen the specialty which makes him valuable as a staff member. It should not take him long to become recognized as head and shoulders above the rest of the staff, with the result that his manager will give him the first opening as a second-level supervisor.

With the experience this man now has, it should not be difficult for him to become an outstanding supervisor. His reward will be promotion to the

fourth-level staff. Here again he meets the two opportunities which service on the staff offers: to increase his knowledge of his specialty, and to broaden his horizon to include the activities of all third-level managers. He will be quick to seize the first vacancy among them.

This man's next step is to the fifth-level staff, which in Figure 1 is the top staff. Here he impresses the president to such an extent that he is made a fourth-level department head. Now there is nothing for him to do but await the retirement of the president and take over his job.

A proper understanding of line and staff can, indeed, show the way to promotion.

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## NATO WATCHERS

*(Continued from page 67)*

In the helicopter, Hulsey and Carver began to warm up the aircraft.

Lieutenant Bertils, armed with the details of the mission, followed the first squad aboard. The helicopter lifted sharply into the air and hopped up to the messhall lawn. The other five men, who had placed their weapons in the helicopter before going to lunch, scrambled aboard. The aircraft lifted back into the air and streaked for the border at altitudes of 10 to 30 feet, following the contours of the terrain as closely as possible to avoid detection by radar or observation posts and to present an elusive target.

Lieutenant Bertils plotted the exact location of the mission on a map and passed it up to the co-pilot. Their destination was an abandoned barn within a rifle shot of the border.

The helicopter swooped down to a landing several hundred yards off to the side of the farm. One squad spewed out the door and dispersed. The helicopter leaped back into the air and buzzed off to the other side of the farm and landed the second squad. As each squad advanced in a pincer movement under the cover of a soldier armed with an automatic rifle, the helicopter orbited at a safe distance from the objective building, serving as eyes for the ground troops and passing on information to the radio operator with each squad.

Two men, impersonating agents who had crossed the border, were quickly flushed and apprehended. Its mission completed, the air-landing team reboarded the helicopter.

On the flight back to the station, the men took turns scanning the surrounding countryside through Bertils's binoculars. Wagers were offered and accepted.

They were betting on which one would be the first to spot a female sun bather. At this they are expert.

## LETTERS

(Continued from page 10)

The heart of the ROTC program is the concept of the citizen-soldier. This is more vital to national survival than the concept of the professional soldier. The single most important element of our national security is our citizens' will to fight. This attribute in the people cannot be maintained by professional soldiers alone. Citizens, in the tradition of our great citizen-soldiers of the past, can do the job. Our fighting services inevitably will reflect this attribute in our people and professional soldiers can have only a limited effect in preserving it.

Mr. Lyons suggests that the ROTC program is sub-professional and wastes student time which could better be applied to general subjects. If this is true, the Army is not living up to its opportunities and its obligations. It seems more likely that some professors are deficient in perception and understanding. The ROTC's job is to teach discipline and leadership. Each of these is vastly more important to the educated gentleman than language or science or poetry. The ROTC, well conducted, is one of the most important programs in any university.

Doughboy drill as purposeful discipline is no sub-professional subject. Ask the educators who have had it. ROTC is training young men who will lead in all walks of life in peace as well as in war. Any professor of military science who doesn't know he is teaching the most important subject in the university should not be there.

The article suggests that we should accept at graduation career officers who have not previously participated in military training. That is sound. We should not reject well-qualified candidates for commissions merely because they are late in developing an interest in a military career, or because they attended a school which had no military course.

Mr. Lyons's suggestion to place career recruitment in the office of the Assistant Secretary of Defense is unsound. Programs for procuring professional officers should be under the direct supervision of the chiefs of staff of the services. Only these officers are qualified to direct such programs. The Secretary of Defense should limit his interest to fiscal and other necessary coordination of the programs. The requirements of each service are different, and any attempt to force them into a single mold would be ill-conceived.

We do not expect educators, starry-eyed with theories of the open society,

to accept without question military views of national defense structure. We do feel, however, that if they are conscientiously seeking the truth and are reasonably intelligent, they will perceive that there can be no open society without force intelligently applied for its preservation. No professor of military science should rest until every other educator in his university has a clear perception of national defense needs and a sincere dedication to their accomplishment.

It is basic that the primary purposes of the ROTC must be preserved. The mission of providing leadership for the citizen army is more important than the mission of providing leadership for the standing army. The latter mission can and must be accomplished without jeopardizing the former.

SHILLELAGH

### THE COMMANDER IS THE INSTRUMENT

● I have read with no little interest the response in the September and October issues to my article "Marching Forth to What War?"

It is probably too late to offer comment. Yet, by way of rebuttal, I'd like to state that the criticisms offered by me were not intended to reflect on the unit to which I belong, but rather on those who prescribe the training for the unit. A Reserve unit is not sufficient unto itself; the commander is not the determinant of training. He is merely the instrument.

CAPT. JOHN GALLAGHER

West Los Angeles, Calif.

● The letters of General Verbeck and Captain Seifert in the September issue point up the one inescapable fact that training is a command responsibility.

Several examples of command responsibility and supervision can be taken from points brought out in both letters.

We do not do close-order drill as a rule, although we require all officers and enlisted men to know the fundamentals. However, I place strong emphasis upon wearing of the uniform and the general appearance of the unit. My predecessor required all officers to wear the Army Green uniform as of 1 October 1957. Nearly all officers belong to the new Civil Affairs branch, and we wear the correct insignia.

An up-to-date library of training material from the Civil Affairs School is on hand for all instructors. Each instructor turns in his completed lesson plan three weeks in advance, and then has a personal conference with S3 before the lesson plan is approved.

My unit uses some training films.

These must be incorporated into the training schedule, and the content and date of the film are checked before it may be used. The film is a demonstration only, and not a canned lecture nor a substitute for instruction.

Officers attend additional instruction sessions for purposes of qualification. Some attend resident courses at Fort Gordon. Between 11 and 14 officers attend regular classes of the 1050th ARSU at the Hartford USAR School. This school furnishes an instructor who comes to our Army Reserve Center on drill nights, and the class starts before our weekly meeting. After class these officers attend our unit drill.

In compliance with current quotas, officers and men of my 411th Civil Affairs Company attend MOI and MOS schools. In addition to all this, concurrent training in rifle and pistol marksmanship is given on the excellent caliber .22 range at our Center. Last year three of our officers and men placed well enough to make the Reserve Center team.

If this seems like a lot of work, it is. High standards have been set for my unit. Close supervision, by the commander and appropriate staff officers, is required to maintain these standards. They must be maintained if our training is to have any value.

LT. COL. MORTON N. KATZ  
Hartford, Conn.

### PERMISSION GRANTED

● The Academic Staff of the Air War College has recommended as selected reading for the students, the articles from ARMY as indicated below:

"Time for Reappraisal: The Joint Chiefs and the Budget Process," May 1959.

"Towards a New Strategy," January 1960.

"Their 'New Look' and Ours," by Brig. Gen. Thomas R. Phillips, March 1960.

"Forward Strategy Reappraised," by Gen. Lyman L. Lemnitzer, September 1960.

"The Soviet Challenge," by Raymond L. Garthoff, September 1960.

Request your permission to reprint these articles to be used only within the school's activities.

Appropriate credit to the authors and magazine will appear on the cover of each copy.

LT. COL. H. H. GOURLEY, USAF  
War College  
Maxwell AFB, Ala.

● The requested permission was gladly granted. THE EDITORS



# ARMY

## irons in the fire

### CLOSED TV INSTRUCTION

The Army Ordnance Guided Missile School at Redstone Arsenal, Ala., has prepared giant-screen television courses on missile instruction for transmission weekly to senior officers 250 miles north at the Armor School at Fort Knox, Ky. In its third consecutive year, the special program on the mainte-



nance of seven missile systems has proved effective in speeding instruction, and avoiding the problem of transporting or duplicating costly missile training equipment. The school also uses TV for its 61 resident courses. The photo shows a segment of the program dealing with the Army's new jeep-launched, wire-guided SS-10 anti-tank weapon.

### HOT PLASMA TORCH

The "Plasma Torch," a device that uses a new principle to generate heats approaching the temperature of the sun, yet without consuming any fuel whatsoever, has been built by Amperex Electronic Corp. It operates by using the energy of a high frequency electromagnetic field to break up and ionize gas molecules into their component atoms (the gas in this form is called a plasma) and then allowing them to recombine into

their original state. When recombination occurs the absorbed energy is liberated in the form of heat. Temperatures in excess of 3,000 deg. C have already been achieved and experiments are now under way to reach 5,700 deg. C, the temperature of the sun's surface. None of its parts ever heat. If the system is turned off and the area near the flame touched, it is found to be cold. The Torch, therefore, can last indefinitely.

### FASTER PRINTING OF MAPS

A printing machine designed to reproduce colored maps by means of an electrostatic process is under development by the U. S. Army Engineer Geodesy, Intelligence and Mapping Research and Development Agency at Fort Belvoir, Va. Electrostatic printing is a new method of printing and based on the fundamental phenomenon of the mutual attraction between particles having an opposite electrical sign. The experimental electrostatic machine being tested by the Lab-

oratories is essentially a single color model. Built by RCA, it reproduces maps directly from miniature separation transparencies. This elimination of platemaking requirements makes map reproductions possible in much less time than by the present lithographic process. Studies and tests of the experimental model are expected to lead to the development of a five-color electrostatic printing machine that will be of approximately the same weight, and capable of reproducing 2000 multicolor maps per hour.

### MOBILE DRONE CONTROL

A new remote control system for surveillance drones has been undergoing field tests at Fort Huachuca, Ariz. Known as the "Flight Control System, Surveillance Aircraft, AN/UPW-1," this trailer-mounted system was developed for the Army Signal Corps by Ford Instrument Co., Division of Sperry Rand Corp.

The system uses trailer-mounted radar and computing equipment to guide small unmanned aircraft carrying cameras, radar, infrared sensors, or other devices to obtain intelligence over enemy or friendly territory.

The system, consisting of a radar, a computer, a plotting board, a control panel and a portable



### EYE PROTECTION DEVICES TESTED

To evaluate the comfort and visual field of protective armor goggles under combat conditions, a member of the 1st Aggressor Company, U. S. Army Combat Development Experimentation Center at Hunter Liggett Military Reservation fires a BAR.

## IRONS IN THE FIRE

power source, requires only two operators. Through the radar, one man is able to track the drone while the other regulates its sensing devices and directs its flight.

The system is designed especially for use on the battlefield. Besides being rugged, lightweight and highly mobile, it can be set up and put into operation in an extremely short time. It can be camouflaged quickly and easily.

### INFRARED KIT

Searchlights, periscopes and binoculars which will enable tank operators to observe the enemy at night by using either visible or infrared light are under development at the U. S. Army Engineer Research and Development Laboratories, Fort Belvoir, Va.

Infrared-visible periscopes, searchlights and binoculars will give tanks the capability of capitalizing on the hours of darkness.

Fort Belvoir scientists are developing the items into a tank kit consisting of an infrared-visible xenon searchlight, a gunner's infrared-visible periscope, a commander's infrared periscope, and a hand-held infrared binocular.

The searchlight is mounted so that it operates in unison with the tank gun. The beam can be varied in width and intensity in either light mode.

The xenon searchlight emits infrared radiation which reflects off objects under observation. The periscopes and binoculars then detect the reflected rays.

The gunner's periscope has both wide angle and high magnification channels using ordinary light and high magnification channel using infrared.

The commander's infrared periscope provides him with a closed hatch infrared viewing capability.

The hand-held infrared binocular permits open hatch infrared viewing by the tank commander.

The searchlight was built under contract with the Laboratories by the General Electric Co.; the periscopes by Perkins-Elmer Corp.; and the binocular by Wollensak Optical Co.

## hot sparks

A 40mm. grenade launcher to fill the gap in range between the hand grenade and the mortar, has been developed by the Springfield Armory. The grenade launcher weighs six pounds and fires ammunition developed by Picatinny and Joliet Arsenal. The shoulder-fired weapon has an aluminum barrel, a radical innovation made possible by the low velocity and pressure which fires the six-ounce projectile.

The projectile travels at 250 ft. per second and is designed to knock out enemy bunkers, machine gun nests or small troop concentrations. A delay arming fuze protects the soldier.

A special hydraulic cylinder designed to withstand rugged and continual use at 3500 psi operating pressures has been developed by the Army Engineers for use in the armored vehicle launched bridge, or "scissors" bridge as it is commonly called. The need for the special cylinder arose when extended field usage of the bridge showed that the commercial tie-rod cylinder was inadequate and created maintenance difficulties.

Army engineers have developed a mobile acetylene plant utilizing a

hydrocarbon fuel rather than calcium carbide. Currently undergoing tests, the new plant is expected to have several advantages over the existing carbide plants used in the field production of acetylene for cutting and welding.

A lightweight, rocket-powered ejection seat for emergency use in Army vertical take-off and landing research aircraft is being tested by the Army. The newly developed seat operates without the necessity for forward speed and provides a safe means of escape at any height from ground level to 10,000 feet.

The Continental Motors Corp., Muskegon, Mich., and Rolls-Royce of England, have signed a license agreement covering full range of Continental aircraft piston engines. Rolls-Royce will be able to supply the full range of engines and spare parts and will provide full after-sales service. The license gives Rolls-Royce exclusive rights for the sale of all Continental aircraft piston engines and spares in Europe, and for Rolls-Royce-built Continental engines in Australia and New Zealand.



### ROUGH TERRAIN VEHICLE

Cushman Motors has developed a "Trailster," for rough going that will scale 100 per cent (45-degree) grades carrying a rider with a full pack. It has a low speed of 6.9 mph and a high speed of 12.3 mph. A conversion kit is also available that enables the Trailster to go even faster for on-street use.

The unit's brake system includes a double-brake pedal which allows braking by either the right or left foot.

The "Trailster" clears 7¾ inches from the ground to the bottom of its frame. This permits it to ride over tree limbs, rocks and other rough terrain obstructions.

# ARMY

## books

### THE DOCTOR KNOWS HIS PATIENT

COUNTDOWN FOR DECISION. Maj. Gen. John B. Medaris with Arthur Gordon. G. P. Putnam's Sons. 303 Pages; Illustrated; \$5.00.

#### Reviewed by

DR. H. F. HARDING, of Ohio State University, a student of our National Security problems, a member of AUSA's Advisory Board, and a brigadier general in the Army Reserve.

"We have worked out a Countdown for firing rockets, but we have no countdown for decision." This sentence with its strong supporting indictment of our military (and political) operational process is the central idea of a book rich in description and suggestion. It falls in the tradition of similar works whose warnings are now taken seriously. I refer to writers like Ridgway, Gavin, Taylor, and Rickover.

General Medaris was retired at his own request earlier this year. For the past five years he labored at the Army Ordnance Missile Command at Huntsville, Alabama, with Dr. Wernher von Braun and a devoted staff towards putting the country first in rockets and missiles. His solid achievements now qualify the man for respectful attention. It is unfortunate that he could not have had three years ago the kind of audience his book is now bound to receive. The price then would certainly have been a court-martial.

In some 23 chapters plus a prologue and an epilogue we follow the American boy, with the help of his experienced collaborator, Arthur Gordon, from his struggling early years in Ohio through the Depression and to the end of an active military career. The story is engrossing, clear, and believable because the composition is so excellent. Anyone who has heard General Medaris speak, or answer a barrage of questions, will concede

that this book does credit to the man. It is not faked or false in substance or in style. This is precisely why the last half dozen chapters ("The Road Starts Downhill" to "The Summing Up") will infuriate so many.

What are the principal complaints and the reforms that are proposed? They are numerous and they range so far and wide that those in other services will insist that General Medaris should have his eyes examined and lower his sights. The thinking reader must decide this matter for himself. I believe the very value of *Countdown for Decision* rests upon its author's high capabilities for target acquisition. If he occasionally overshoots he lets us know that there is probably "enemy" activity in the area. In this case enemy means incompetence, inefficiency, ineptitude, and plain incapacity for decision. And there is never a shortage of these targets. The man who managed to put the Explorers and Pioneers in space after the humiliating news of the Sputniks deserves a fair hearing.

The deficiencies are concisely summarized on page 287 under the head of "conclusions concerning the state of our national defense." There are 10, and they are worth paraphrasing or quoting:

- The U. S. already has more weapons than it needs to retaliate with unacceptable damage upon a potential enemy.

- By duplicating and enlarging that capability we are wasting resources needed for more important objectives.

- We have "abjectly failed" to see the urgency of protecting major cities and our counterstrike power against nuclear attack.

- We have failed to provide "self-sufficient forces with adequate mobility" for limited war.

- We have insufficient funds for advanced research.

- By over-supplying "massive

retaliation" and short-supplying other forms of military power [like STRAC] we have endangered the security of the U. S. and the Free World.

- "Compromise and expedience dictated by pressure groups have adversely affected our defense posture."

- Our international prestige has suffered from splintering missile and space programs.

- Most of the problems stated above can be solved by "timely, intelligent, and forceful decisions" but we can never recover money or time already lost.

- American citizens must "awaken to the duties and obligations of citizenship. . . . They must fully understand the nature of the total threat to their security and to their freedom, and recognize that this threat is by no means limited to the military sphere. Selfishness, softness, and disinterest can be just as deadly to America's future as any lack of military power."

These are the charges. The specifications are detailed, documented, and alarming to the ordinary citizen. The effect is to recall what we like to forget. And what are the remedies proposed? Here they are, as found on pages 272-274:

Recombine the Army and the Air Force into a single service.

Create a single chief of staff of the armed services "with the heads of the services as advisors only to him."

Make sure that this chief of staff is the most able officer and that the post will be free of political bias or "conformity."

Reduce the civil service staff of DOD to one-tenth present size.

Reduce by at least half the assistant secretaries and deputy assistant secretaries of DOD and the services. The remainder should have policy supervision over broad areas and not merely boss one military officer.

The Bureau of the Budget should influence and advise the President "with respect to the preparation of the budget before it is presented to the Congress."

General Medaris admits these are drastic remedies but he says the disease requires drastic treatment. Research groups, political scien-



tists, journalists, and U. S. senators have been saying the same for some time.

The difference is that this doctor has observed the patient at close range. It was experience, bitter rather than bookish, that formed his opinions of the actions (or lack of action) by the White House, the Secretary of Defense, the high command of the Air Force, and the Deputy Secretary for Research and Engineering.

It would be a mistake to condemn *Countdown for Decision* as the work of a mean or small-minded man. It is the work of a patriot who devoutly believes that "decision is the key in the countdown of history toward the survival or destruction of the human race." I agree. We desperately need more high-minded, dedicated, informed, and courageous leadership. It has been too little. It may already be too late.

#### HANDLING DIFFICULT PEOPLE

THE MEMOIRS OF GENERAL LORD ISMAY. The Viking Press. 488 Pages; Illustrated; Maps; Index; \$6.75.

Reviewed by

FORREST C. POGUE, author of *The Supreme Command* in the Army's official history of World War II.

It is news when a British leader speaks well of his American colleagues' role in World War II. It is even more interesting when he chides some of his British associates for their strident judgments. Lord Ismay, who won U. S. friendship at wartime conferences and in postwar NATO meetings, has written an informative book which is free of harsh criticisms and condescension.

It is the type of book one would expect from "Pug" Ismay, a man with a gift for story-telling, a capacity for hard work, and a bent for conciliation. As Chief of Staff to the Minister of Defense (Churchill) and as deputy secretary to the War Cabinet, he learned the art of handling difficult people. We find that the Prime Minister could be hard to deal with, but that he had a way of making up for it. He is clearly the hero of Ismay's book.

We are not surprised to find the author taking issue with some of Alanbrooke's claims and charges. Ismay regrets that the diary was

published verbatim with comments, made in moments of irritation or despondency, exposed to the public view. "In these circumstances, the dogmatic, sometimes wounding, and often unjustifiable comments . . . cannot be regarded as considered judgments." Their effect, he fears, is to cause readers to question the Field Marshal's true worth. Despite these strictures, the author concludes that of the eight chiefs of the Imperial General Staff with whom he worked over 18 years, Alanbrooke was the best.

Eisenhower and Marshall stand high in Ismay's book. Praising the former for his work in developing Anglo-American harmony, he asserts "there may have been other American and British generals who could have wrought this miracle of co-operation, but I cannot name them." Of Marshall: "He was a big man in every sense of the word, and utterly selfless. It was impossible to imagine him doing anything petty or mean, or shrinking from any duty, however distasteful."

On the great conferences and the major strategic decisions, Lord Ismay adds little new documentary material. But he performs a valuable service in reminding readers of the problems of the moment and in warning against undue reliance on hindsight judgments.

If one wishes to learn how Mr. Churchill was able to translate his commands into action, he will find the answer in Ismay's compact description of the machinery of the Ministry of Defense. Better still are his stories of the human element which entered into the workings of the machinery. One catches a glimpse of the impish Churchill in his story that if, towards 0100 or later, Ismay glanced pointedly at his watch, the Prime Minister would airily remark that you may go to bed if you like, but I intend to do my duty.

Some of the best stories are those dealing with Ismay's service as a young officer in India and his World War I experiences as a member of the Camel Corps in British Somaliland. Churchill once rebuked Ismay for his lack of feelings when he failed to shed a tear over a moving speech by De Gaulle, but the sentiment of an old soldier shows through these pages.

One regrets that only two pages are devoted to Ismay's role as the first Secretary-General of NATO, 1952-57. He notes the difficulties which that organization faces, but quotes from his final speech: "I have always been convinced that the North Atlantic Alliance is the best, if not the only, hope of peace."

Lord Ismay did not lead armies into battle nor did he stand at the very top level of those who made the great strategic decisions of the war. He disclaims the suggestion that he was an adviser to Prime Minister Churchill. Rather, he was an "agent," as he puts it, of the man at the top. Through his loyal services the directives of his chief reached those who put them into effect. As one who saw the problems of making ideas work, he gained and he passed on an understanding of men who lead and a tolerance of judgment about their decisions and actions which are invaluable to the student of the crises of the last 20 years.

#### ARTILLERY IN THE CIVIL WAR

GRAPE AND CANISTER: The Story of the Field Artillery of the Army of the Potomac. L. Van Loan Naisawald. Oxford University Press. 593 Pages; Maps; Index; \$10.00.

Reviewed by

LT. COL. FAIRFAX DOWNEY, author of *Sound of the Guns, The Guns at Gettysburg*, and three other works on the Civil War.

A first-rate book, this story of the Army of the Potomac's field artillery. It will appeal to all gunners and to students of military history, especially of course Civil War buffs. One learns where every battery in the major actions took position, its part in the battle, and the types of ammunition used. Woven into the dramatic narrative are descriptions of the service of the piece for which the lay reader will be grateful. The role of Civil War artillery, its organization in the Eastern Theater, and its personnel and materiel are fully treated.

Here is a worthy companion to Wise's notable history of the artillery of the Army of Northern Virginia, *The Long Arm of Lee*, until now without a full-scale Union counterpart. And this book, too, comes from a Southerner. The

author is a graduate of VMI and of the University of North Carolina. He saw active duty as a field artillery and staff officer from 1941 to 1946. A tour in the office of the Chief of Military History and his current assignment as major of Artillery in the Virginia National Guard add to qualifications of which he makes good use. His painstaking research is evident from the book's wealth of detail.

Among the volume's few debits are: omission of striking minor actions by artillery in favor of the major battles; too brief consideration given the horse artillery; no bibliography, a lack for which source credit in the notes does not compensate. Except for a bang-up jacket, a few sketch maps, and appendix line cuts, there are no illustrations. Still this is a long book, priced at ten dollars, and with publishing costs what they are you can't have everything. Most to be regretted, in my opinion, is the use of the word "grape" in the title. The author knows grape shot was not fired by Civil War field pieces and so states in an appendix. He attempts to justify his choice as "a bit of poetic license." Canister, yes; that was artillery's most effective killer round. Grape, except for siege guns, no. It was a pity to mar so fine a work by mistitling.

## LEGAL ADVICE FOR THE SOLDIER

EVERY SERVICEMAN'S LAWYER. Major Earl Snyder. The Stackpole Company. 341 Pages; Index; \$3.50.

### Reviewed by

COL. JAMES K. GAYNOR, who is on duty in the Office of The Judge Advocate General.

It is not uncommon for the lawyer to look with misgivings upon a book which purports to be a layman's legal adviser. The military lawyer does not fear that such a book will cause him to lose clients; he receives no additional compensation for legal assistance. Too many times, however, his advice will be sought by a soldier who has tried to be his own lawyer—to his detriment.

The lawyer need have no misgivings about *Every Serviceman's Lawyer*. Its wealth of information clearly indicates the circumstances

## Selected Check List of the Month's Books

*This is a run-down of some of the books we have recently received.*

**FOLLOWING THE INDIAN WARS.** Oliver Knight. University of Oklahoma Press. 348 Pages; Illustrated; Maps; Index; \$5.95. The story of the newspaper correspondents in the Indian campaigns. They not only accompanied the troops, but fought with them.

**FROM MANASSAS TO APPOMATTOX.** Lt. Gen. James Longstreet. Indiana University Press. 692 Pages; Illustrated; Maps; Index; \$8.95. Reissue of the memoirs of Lee's "war horse," first published in 1896. Written in late life, it is a defense of the service of the soldier who became the scapegoat for Gettysburg.

**GUN DIGEST, 1961.** John T. Amber, ed. Gun Digest Company. 352 Pages; Illustrated; \$2.95. A must for sportsmen: 37 articles by leading authorities with 775 illustrations; 15th edition of the encyclopedia for shooters.

**THE MILITARY LAW DICTIONARY.** Richard C. Dahl & John F. Whelan. Oceana Publications. 200 Pages; \$6.00. A working tool that supplements, and is in no way a substitute for, more ambitious works. The authors are law librarians in the Pentagon.

**NAVAL LOGISTICS.** Vice Adm. George C. Dyer. U. S. Naval Institute. 351 Pages; Illustrated; Index; \$5.00. Applied logistics within the Navy, with much essential information on procedures in joint, national and international operations.

**OPERATIONS RESEARCH AND SYSTEMS ENGINEERING.** Charles D. Flagle and others, eds. The Johns Hopkins Press. 889 Pages; Illustrated; Index; \$14.50. Lectures by scientists of JHU and its Applied Physics Laboratory and ORO, covering physics, economics, statistics, psychology, several branches of engineering, and mathematics.

**REPORT TO THE COMBINED CHIEFS OF STAFF BY THE SUPREME ALLIED COMMANDER, SOUTH-EAST ASIA, 1943-45.** Vice Adm. The Earl Mountbatten of Burma. English Book Store, India. 280 Pages; Maps; Index; \$6.00. Reissue of the official report of the campaigns of SEAC from August 1943 to the Japanese capitulation.

**WAR MEMOIRS.** Lt. Gen. Jubal A. Early. Indiana University Press. 496 Pages; Illustrated; Index; \$7.50. A retitled reissue of Old Bald Head's memoirs, first published in 1912. No history of Lee's army is complete without the part played by this Unreconstructed Rebel in separate operations in the Valley, as well as his conduct of one of Lee's corps.

**THE YEARS OF THE WAR BIRDS.** Arch Whitehouse. Doubleday & Company. 384 Pages; Illustrated; Index; \$4.95. The story of the men and planes of World War II.

under which legal advice should be sought. Many times, after explaining the general law, the author suggests that one with a particular problem "see the staff judge advocate or legal assistance officer, or a reputable civilian lawyer."

In the first part, the author explains one's personal liability to the armed forces, what the judge advocate can do for him, how a person is drafted, problems of overseas service, operation of a nonappropriated funds activity, and the serviceman's civil rights, to mention a few chapters.

The next part provides information about marriage, with a chart of the requirements of the states, duties of husband and wife, separa-

tion and divorce, insurance, and the making of a will. There is even a chapter on wild and domestic animals. Charts show inter-racial marriage and divorce laws of states.

In the third part there is information concerning the purchasing or renting of a house, mortgages, borrowing money, buying an automobile and insuring it, and the serviceman's liability for taxes. A chart lists income tax information for each state with the serviceman's liability for such taxes.

The last section is a concise dictionary of legal terms, 15 pages which explain such terms as *bailment* and *caveat emptor*.

Major Snyder is an Air Force officer who is presently Assistant



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SJA at Shaw AF Base. His legal background includes a Master of Laws degree and he is one of the few American military lawyers—possibly the only one—ever to be admitted to practice in the courts of England. He has written scholarly articles for legal journals, but he has avoided the scholarly touch in this book. It is written for the serviceman, in serviceman's language, but even the lawyer will find it invaluable for quick reference.

A word of warning: the guard-house lawyer may be disappointed, for only one chapter deals with military justice. It offers guidance for one who is in trouble, but no help in circumventing the punitive provisions of the Uniform Code of Military Justice.

### FACILE BUT SUPERFICIAL

THE WAR: A CONCISE HISTORY, 1939-1945.  
Louis L. Snyder. Julian Messner, Inc. 579  
Pages; Illustrated; Maps; Index; \$7.95.

### Reviewed by

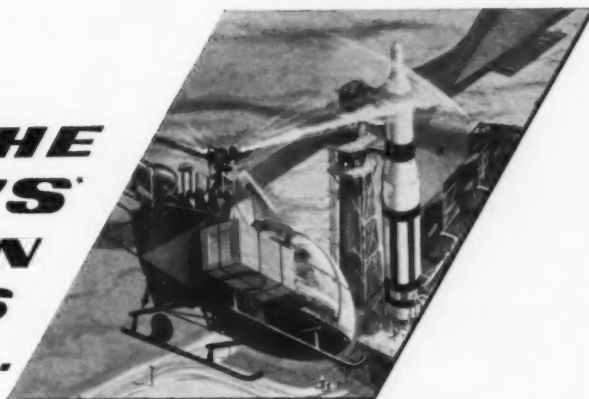
MAJOR MARTIN BLUMENSON, a civilian historian in the Office of the Chief of Military History.

Writing the history of any war is no easy undertaking. World War II is particularly difficult, not only because of its unprecedented scope but because of its complexity. Events occurring simultaneously in far-flung theaters of the world, political and economic matters exerting profound influence on developments, new weapons and techniques appearing, subtle relationships of personality and power—altogether a tremendous mass of material to compress between the covers of a single volume.

Professor Snyder has made a good try but he fails to come up with a satisfactory effort. The basic trouble is the sources he has used. For the most part they consist of newspaper reports, participants' memoirs, journalists' explanations. Fifteen years after the war, these no longer suffice. There is no real evidence that he has studied and digested the serious literature of the war. He seems to lack understanding of the main threads of development. He has no sure grasp of military operations. The result is a facile, rather superficial account of events that, despite its length, is little more than a chronological outline of the conflict.



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